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NEUROPSYCHIATRIC SUPPLEMENT

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SYMPOSIUM

on psychoanalysis

Introduction

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THIS YEAR WE in the practice of psychoanalysis are observing the centennial anniversary of Sigmund Freud's birth. It is, therefore, fitting that we should respect this occasion by presenting this symposium on psychoanalysis and that it should include some considerations of the science of psychoanalysis not usually brought out in discussions.

For many years the members of the profession of medicine were as negligent in understanding and the handling mentally ill as were the members of the clergy, with their then theologically justified attitudes. Only toward the close of the eighteenth century did certain changes begin, and these were scattered efforts of nonconformists of both the medical and the theological world. By the middle of the nineteenth century advances had been made toward the stage of recognizing mental patients as human beings and not as objects of torture for both religion and medicine. But even then, under the name of medical science, surgical and medical procedures took precedence over the psychologic approach in treatment.

Even today emphasis is placed upon the physiologic approach by modalities such as shock therapy, lobotomy, and chemotherapy. The tranquilizing drugs have proved useful and valuable, if only to decrease the intensity of a patient's suffering, but it is quite generally agreed that they are palliative and not therapeutic.

In the osteopathic profession, in which we have been so solidly grounded in the physical approach, it is tragic to see that the concern with an organic factor prevails to a large extent in our psychiatric rationale, despite lack of evidence of an organic cause of the functional psychoses and the psychoneuroses. We do not hesitate to accept the rational importance of physiologic reactions and emotional and psychologic disturbances, but there is a tendency to place the emphasis in the wrong direction. The need for research in this direction is extensive. Although our educational institutions are strengthening the position of their departments of psychiatry, a considerable number of our graduates still feel impelled to disregard the importance of psychodynamics in relation to psychoses and neuroses.

As a psychoanalyst, I am only too well aware of the various forms of resistance against psychoanalysis from individuals and social groups. Those of us who are psychoanalytically oriented understand the reasons behind such resistances. Experience has shown me, as it has many others, that the efforts necessary to combat these resistances are hardly worth while in terms of the necessary emotional expenditures. Rather, I feel that there are two measures which we should take: (1) to welcome any earnest aspirant to further his knowledge of psychoanalysis and to assist him to understand this science in any and all ways we can, and (2) to devote our energy to work and study for the furtherance of the science of psychoanalysis and to write and to discuss our work and our results with those working in the same direction. In these ways we will be contributing to a better ultimate understanding of man, and it is only by this that we can pass from the emphasis of the cure of the individual toward the goal of making possible the prevention of the illnesses that are the province of our specialty.

It is with this anticipation that the speakers to follow have planned their discussions on psychoanalysis.

Rittenhouse Claridge, Rittenhouse Square

Psychoanalysis—What it is and what it is not

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PSYCHOANALYSIS HAS been interpreted in many ways and given meanings which Freud did not intend. It is a group of psychologic laws and hypotheses and is interested only in the *psychologic* connections between mental processes. It cannot be directly applied in an organic or material sense. Psychoanalysis is the investigation of unconscious mental processes as they arise from sexual and destructive impulses.

When Freud reported his findings to the world around 1900, two of his theories in particular offended the world and excited its resentment. One of these conflicted with the intellectual prejudices of civilized man, the other with his moral and esthetic prejudices. The first was that mental processes are essentially unconscious, that mental acts which are conscious are isolated and only surface functions of the whole psyche. The second later became Freud's theory of the sexual versus the self-preservation instincts. He maintained that a large part of the causation of nervous and mental disorder arose from impulses which could only be described as sexual in both the narrower and wider senses of the word. Libido always fights for satisfaction and is frequently opposed by social, reality factors. Libido means sexual energy, comparable to an electric charge transmitted through wires. These impulses of the libido have done more than contribute to mental disorders and normal sex life. They have stimulated the highest cultural, artistic, and social achievements of the human mind. It is this acceptance and recognition of the sexual instincts by psychoanalysis that has been the main source of the so-called splits and deviant schools of modern psychology.

Freud was of the opinion that culture had been generally built up, under the pressure of the struggle for existence, by the increasing renunciation of primitive impulses, and the conflicts of cultural evolution are always being recapitulated in each individual who, in his turn, joins the community. The sex instincts are the most important instinctive forces utilized by sublimation; that is, their energy is turned aside from directly sexual goals and diverted to other ends which are no longer sexual and are socially more valued.

Sexual impulses are controlled only with difficulty, and the social structure built on their suppression is a very insecure one. In our highly complex civilization today, there is wide apprehension that a rebellion of the sexual impulses may occur against this wholesale divergence of their energy. Our society can think of no greater menace than would arise from the liberation of the sexual impulses and their return to their original goals.

Perhaps the most striking feature of the human mind is the incessant conflict with it . . .

We have only to look around us, to read the newspapers and court reports to see the instinctual forces at work between man and society. This is only a reflection of the conflict in the individual human life itself, between one side of man's nature at war with the other side. Perhaps the most striking feature of the human mind is the incessant conflict within it, especially in the unconscious layers. When psychologic concepts are considered dynamically they are seen as a play of forces, expressions of tendencies striving toward some goal and working together and against one another. This dynamic view not only throws light on the conflict within man but between man and man and between nation and nation. The psychoanalytic conception is really dualistic—the mind is an arena, a sort of tumbling ground for the struggle of antagonistic impulses. Expressed in nondynamic terms, it can be said that the mind is made up of contradictions and pairs of opposites.

This conflict arena is well represented in dreams. Dreams present a graphic picture of the tumbling ground and the struggles going on beyond consciousness. Dreams are the life of the mind during sleep, and they help to protect and preserve sleep. Psychologically speaking, when a person sleeps, he refuses to have anything more to do with the outer world, he has withdrawn his interest in it, and he tries to ward off the stimuli proceeding from the rest of the world. This is the withdrawal of object libido, that is, the sexual energy attached to personal objects in our external environment. What then occurs is a regression or return to a level of libido development that is called narcissism or self-love. When Freud[1] wrote his great paper on narcissism, he presented a second version of his instinct theory by counterposing object love or alloerotic libido and the libido of self-love or narcissism.

Isakower[2] of Vienna made an important contribution to psychoanalysis when he published a paper on the pathopsychology of phenomena associated with falling asleep. From first-hand accounts and careful observations of many different patients, Issakower described what might be termed "the disintegration of the ego in falling asleep." Step by step, he pointed out the mental processes of the withdrawal of object libido and the regression to the narcissistic, primitive level that is reached in sleep. The phenomenon is the same as that which occurs when the schizophrenic complains that his world is falling apart or coming to an end. It is the loss of function of the external perceptual ego, this concentration of mental energy in the internal perceptions of the body ego, which now permits the unconscious and the primitive sexual and aggressive instincts to seek gratification within the psychic structure itself by a motility that disregards external factors, as in schizophrenics.

With such regression in sleep, that is, almost total rejection of external perception, it would seem that the primary processes of the id (the most unconscious part of our mental structure) would have free reign over the mind, but they really do not. Here the results of mental action during sleep can be contrasted to the waking life as well as to the processes which go on during psychoanalysis of a patient.

The unconscious itself is amoral. Its fundamental content is formed by repressed infantile, primitive impulses. The contents of the unconscious are made up of representations of instincts and concrete ideas or ideas of things. The term "representations of instincts" is used because the instincts are not perceived per se but only through their psychic and somatic manifestations, and through strivings and emotions which attach themselves to ideas and give rise to wishes. When the instinct representations are accompanied by motor and secretory changes, they appear to us as effects.

The functioning of the unconscious in dreams can be understood, but only if the analyst does not simply accept the manifest dream as related to him by the patient. A dream is a transformation in visual form or plastic imagery. It is a hallucinatory revelation that an unconscious wish has been fulfilled, and reality has counted for little in it. The displacement and condensation of the unconscious processes bring about a manifest dream, that is, the one which is consciously remembered and often appears so strange to the dreamer. What happens is that the preconscious mental structure acts as a censor and only permits altered and distorted impulses which are acceptable to the ego into consciousness. Thus sleep is protected, but nightmares can occur when the unconscious ideas and affects escape the censorship, and the dreamer awakens. The real meaning of a dream is in its latent or unconscious content, and this content can only be discovered when the dreamer associates freely to the manifest parts of the dream.

The resistance and defenses which take part in the dream are identical with those of the unconscious in waking life and those manifested in the psychoanalysis of a patient. They are constantly at work, attempting to repress the instinctual ideas, to exclude whatever is not acceptable to consciousness. In everyday life, this unconscious material is evidenced in slips of the tongue, in errors, in forgetting or mislaying things, et cetera. The basic mental mechanisms are always at work, trying to gain satisfaction for inner demands and at the same time trying to satisfy the de-

mands of external reality. It was this striving of sexual and destructive impulses against the desire for self-preservation and against reality which probably created the unconscious in the first place and brought about repression. If this were not so, there would be no need for repression, and there would be no civilization, the essence of which lies in a certain hypocritical denial of the instincts. In wartime, individuals approximate a functional level of quasianimal gratification, as if communal permission had been given to the provisional lifting of repressions and a holiday for the instinctual impulses.

In psychosis the breakthrough of instinctual forces with disregard for reality is witnessed. Unconscious manifestations are easily perceived in the behavior and verbalizations of the psychotic person. In this regression, it is possible to recognize and delineate the pregenital levels of personality and character development that Freud first described which are associated with the stages of libido development in all human beings. Psychotic behavior corresponds to those childhood levels in which the instinctual demands were the child's only demands, where his libidinal goals were to be satisfied by the environment, and where autoerotic gratifications were his chief pleasures. Whereas the psychotic person regresses to the sexual involvements of infancy, the adult (normal adult) experiences and expresses infantile sexual pleasure as part of the foreplay of the sexual genital act.

The erotogenic zones which give primary pleasure to the infant remain in force throughout human life. The sexual phenomena of childhood are forerunners of adult sexuality and, if many of their derivatives are difficult to recognize as such, it is because the sexual instincts are extraordinarily plastic and find multiple means of expression, whereas the self-preservation instincts are usually more rigid. As culminations of infantile sexuality are the anxieties and fears about castration and the solution of the Oedipus complex, when the child abandons his sexual aims for one parent and his hostility for the other and is ready to enter community life. These early conflicts over sexuality and aggression especially give rise to repressions and ensuing mental disturbances in later life. But unfortunately it is not possible to discuss these subjects at this time.

About 2 years ago Jung[3] accused Freud of viewing the psychotic structure as a mere appendage of the genitalia. This statement is as much a misconception as stating that infantile sexuality, from Freud's point of view, has nothing to do with genital sexuality. Had Jung stated that it is in an appendage of the erotogenic zones of the body, some relationship might be apparent. However, a study of Freud's work must conclude that he not only united the science of sex with psychology, but that he also showed the psychologic origins of morality and what is known as character. In his theory, the id, the instincts, are counterposed by a force equally ruthless and unconscious, the superego; that is, the parental authority as it is assimilated into the child's own mental structure. Members of the British school of analysis, especially Klein,[4] developed Freud's conception further and showed through detailed investigations of little children that the superego is not merely the effect of the parents on the child but that it is often more savage and oppressive in children whose parents are mild and permissive. Something in the child himself demanded some equivalent for inner guilt feelings which disregarded reality as much as it disregarded pleasure-seeking instincts. This furthered the conception of an instinct other than the sexual, which was destructive in essence but which could be ameliorated and constructively channeled.

Recently psychoanalysis, especially with the work of Rosen,[5] has won the right to be called a successful treatment of some psychoses. Rosen stated that the recoveries from schizophrenia that have occurred in his practice could only be maintained if the patient underwent regular psychoanalytic therapy in order to gain a durable insight into the pathologic conflicts and defenses. Psychoanalysis broadens the horizons of the ego, helps make the unconscious forces conscious, works the internal conflicts through so that one recognizes their sources instead of having hidden fears. During the actual psychotic episode, Rosen interprets the words and actions of the patient directly and finds that the Freudian interpretations are both accurate and effective. He carries on a kind of emotional communication with the patient on a level close to the unconscious, using the raw data of his own unconscious to make contact with the patient's wishes and fears. Rosen believes his therapy would be valueless in the hands of someone untrained in Freudian psychoanalysis.

I cannot discuss the deviant so-called schools of psychoanalysis in any detail, but I will try to point out in what points they have deviated.

Adler's "individual psychology" rejected the use of concepts such as repression and infantile sexuality in favor of reducing neurotic conflicts to a drive for power because of feelings of inferiority. He saw neuroses from the side of the ego's interests only. Analysts regard Adler's work as a contribution to our knowledge of the secondary defenses which the ego sets up against instinctual and unconscious impulses.

Jung rejected the sexual concept of libido and preferred to use the word "libido" for tension in general. Later he adopted the term to refer to psychic energy in general. He attaches no importance to sexuality in childhood which, for him as for so many others, is innocent of lusts of any kind. This is totally at variance with the increasing experience and knowledge of childhood disturbances in sex and aggression. Jung emphasizes the Freudian science of symbolism but, in the hands of his followers, the symbol loses its biologic and evolutionary meaning and becomes a religious or philosophic category.

In psychosis the breakthrough of instinctual forces with disregard for reality is witnessed

Freud was the first to attribute psychologic importance to the trauma of birth as the prototype of anxiety, but Rank developed whole psychologic and philosophic systems from this Freudian starting point and, in doing so, found himself outside the scientific currents of development. In emphasizing the anxiety of separation from the mother, which is indisputably basic, Rank ended up by excluding everything else of

Freud's scientific contributions. In fact, one could say that it is a characteristic of the deviants that they substitute a catchword borrowed from Freud for the detailed investigation of the unconscious and the instincts.

Horney and Fromm disregard Freudian knowledge about the biologic instincts in man's psychology and maintain that man's external culture and environment are the determinants in human nature and character and are the causes of mental illness. They are more interested in the effects of temporary social institutions on the growth of adults and cannot see that erotogenic zones have anything to do with character. Thus where Freud saw miserliness as an anal trait and traced the interest in money to the infant's pleasure in interest in his feces, they emphasize what Freud always admitted, that miserliness is encouraged by our commercially minded society.

At the other extreme is the school of Reich, which took up Freud's theory that a disturbed sexual life is the cause of neurosis and proceeded to do both good and harm to the cause of sexual science. To all intents and purposes, Reich and his followers have become an exclusively physiologic school and are now inclined to ignore everything that has been learned about ego development in childhood in favor of muscle training and cosmic theorizing.

However, most workers in the field of psychology are eclectic and do not like to attach themselves to any school. They prefer to derive whatever they may find useful in Freud, add a little Jung or Adler, with a dash of Horney and Sullivan and occasionally to use some of Reich's technics, and they find no difficulty in combining this hodgepodge psychology with the latest results in chemotherapy or neurosurgery. However, science has always worked with a central theory, although it has never been afraid to change it as new facts are discovered, and it is my opinion that, in psychology and psychiatry thus far, Freud's theory has met the tests of time and experience.

Some critics have suggested that Freud disregarded culture, and others maintain that his theory is entirely a cultural system. What we must infer from this is that his theory works harmoniously with both the internal and external forces of human nature. He extended the earlier theory of heredity beyond the 9 months in the womb to include the first 5 or 6 years of life as basic determinants in mental structure. As we used to say at home, "You can take the boy away from the farm, but you can't take the farm away from the boy."

2011 Pine St.

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Psychoanalysis in medicine and allied fields

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TO UNDERSTAND THE vagaries of human nature it is necessary to understand the total human animal, his superficialities as well as his deeply hidden nature. In my opinion, the field of medicine through the years has paid only lip service to the unity of mind and body. Many famous physicians and teachers have been emphasizing this since the time of Hippocrates, and yet only recently has action on it been approached with any degree of consistency. It has been stressed that one of the most valuable contributions a family physician can make to his patients is knowing them well over a period of years. A physician is also one professional man who improves with age. He knows when an epidemic strikes that people become frightened and disease of all kinds is more prevalent.

The word "disease" comes from a Latin prefix denoting reversal or separation, and the French word "aise," ease; in other words, dis-ease. The one who complains is in a state of dis-ease which stems not only from his somatic pain, the most common of all complaints, in one form or other but also from a simultaneous state of dis-ease mentally. His discomfort may be superficial or deep inside him, something strange which he cannot fathom. His discomfort is registered in the mental sphere and expressed in feeling, speech, actions, or thought, regardless of its origin.

These are the manifestations studied by the psychologist. So it can be seen that any physician, whatever his special interest, comes upon these manifestations, because they are pervasive. Many physicians, teachers, psychologists, lawyers, and general students of humanity, regardless of their special field of operation, all too often neglect these manifestations in their depths. The physician, although becoming much more sophisticated, still tends to treat a physical complaint with a physical modality. Many psychiatrists know of the psychologic manifestations and observe them constantly but still deal with them only in terms of the physical.

The psychoanalyst, in observing and dealing with the entire individual, understands that the physical state of the individual affects the psychologic side but makes an even more pertinent observation that his psychologic state produces its own special manifestations as well as changes in the physical body.

In the progressive field of psychosomatic medicine, which actually originated with the findings of Freud, it is not enough to say that this or that is psychosomatic or that it is a psychophysiologic symptom. To be able to deal with it satisfactorily one must also know the complicated psychology that brought such reactions about. If it is known that a reflex can be initiated in the psychologic sphere, then this phase must be studied extensively. This is the realm of psychology. Those who prefer to study the manifestations on the basis of neurophysiology, chemistry, and anatomy are neurophysiologists, biochemists, anatomists, or histologists; they do not study the psychologic manifestations and the reflex events which are initiated from the psychologic sphere.

It is well known that the infant develops control over his bladder and bowels at the age of 1½ to 2 years. Actually it is the capacity for control which develops at this time, and control develops from voluntary effort. Conscious control results. Anything that interferes with this aspect of conscious control causes the individual to lose control of his sphincters. The interference may be a physical disturbance or a disturbance of his psychologic ego control. So in the symptom of enuresis can be seen early in life the manifestations of a pure psychologic disturbance or disturbed ego control. Psychology, no matter to which field it is applied, medical or otherwise, is of the whole field of psychology and is not restricted.

Scope of psychoanalysis

Psychoanalysis is the first and most extensively organized body of psychologic material that best explains human behavior and personality. No one will ever find a physical or chemical reason specific for the phrases, similes, and metaphors used by the poet or, similarly, for the woeful self-reproaches, agitation, and subtle underlying sadism and hostility of the depressed person. Nor will the anatomy of atomic configuration of cellular material explain the process of identification. This is not to say that such researches into the pathologic physiochemical changes occurring in such an individual will not throw light on his entire state. Psychoanalysis by its investigations has actually thrown light on the dark areas of the physical and chemical reactions of the emotions. The scope of activity of the physician today actually extends to the cultural, educational, sociologic and preventive aspects of human suffering. Those of us who are interested in understanding and treating human suffering do so with all these areas for enlightenment.

Psychoanalysis provides the greatest field of activity under its single heading. The basic, deep, and dynamic concept relating to the interplay between conscious and unconscious motivation is the psychoanalytic understanding. Most all of the workers in psychiatry today use, in one way or another, the findings of psychoanalysis, although they may not be aware of the fact. In the therapy of psychoneurosis or psychosis, whether one follows Rogerian nondirective therapy or that of Sullivan, Fromm-Reichman, or Rosen, the influence of psychoanalysis is seen. In other words, there is, regardless of the new terminology, the concept of the unconscious, ego functioning, repression, resistance, and transference. Any therapy or method that attempts to understand human behavior of the normal, neurotic, or psychotic and that does not take into account the above phenomena, falls purely into something extremely superficial. It is as superficial as recommending a vacation or ocean voyage as therapy, which is, as I believe every psychiatrist recognizes today, just sending the patient away without actually treating him.

Unity of mind and body

In recognizing and accepting the concept of unity of mind and body, it is necessary to appreciate that in diseases of the body there is always mental disease or discomfort. For example, in a simple case of measles, the patient has fever, respiratory inflammation, and an itching rash on his body. He also has a feeling of restlessness and helplessness, the mental anguish of being pinned down, and the difficulty of not being able to fight off this unseen attacker in his usual aggressive manner. The child usually wants his mother, he wants to be held most of the time, or he cries to keep those around him who will add strength to him, but at times he wants to be left alone in a quiet state to rally against his disease. It is true that the inflammatory process lowers his resistance, but this also lowers his mental strength, the ego strength, and the child gets the feeling of helplessness. These manifestations can easily be observed if the physician is alert. The child feels the anxiety of impending destruction. This anxiety is what always makes the clinical picture worse. The feeling of helplessness and regression of the child weakens the physical resistance by excessive or retarded discharges of energy, thus making the difference between the calm course of the disease in one child and the development of pnuemonia in another. Treatment is certainly indicated to aid the child, but treatment means not only medication but caring for the child by other means as well. The ego is strengthened by both means. The disease that is felt by the child is present in one degree or other. If a drug produces an undesirable reaction, he may react to it as though it were a bad substance and unconsciously think of it as poisonous or bad milk, or bitter substance rather than sweet. This may cause a poor reaction regardless of the actual virulence of the measles.

Another example might be a patient whose gallbladder should be removed. He may react to the pronouncement of his physician in many ways. He may think of surgery as an attack on his body and resent the physicians in charge. Thus he may unconsciously cooperate poorly. The physicians may never know why the case did not progress normally. They may not recognize that the patient was frightened. Because of the fright, the patient may not cough. It is well known that cough is necessary to produce normal expulsion of the bronchial mucus; without expulsion of mucus, pneumonia develops. The patient may feel this surgery performed on him is a form of castration; that is, removal of one of his organs. He is frightened, and a vicious circle develops which may result in spasm of the stomach and first part of the duodenum with resultant spasm of the sphincter of Oddi; the patient then develops the typical postcholecystectomy syndrome.

The patient may react to the diagnosis of gallbladder disease and proposed surgery with the idea that there is some bad, poisonous material inside him. The unconscious mind always reacts and functions in terms of infantile, internal psychic reality. A disturbance of the ratio of cause and effect may occur; that is, something is wrong and it is bad; therefore, something bad must have caused it. Following the operation the patient may feel that all of the poisonous material has not

been removed, and he may develop colitis with diarrhea in an effort to get rid of it. These examples could be extended many times.

The male and female climacteric are recognized as being largely psychologic disturbances today, and in my experience the basic psychodynamics of depression are frequently found, which can explain the vasomotor instability.

The coronary patient with the blood supply diminished or shut off, besides suffering pain, is in a highly anxious state, because he regards his heart as the source of life, as one of his most highly prized organs. He may feel as though the "heart of him" had been removed, or he is in such danger that he cannot escape death. The attempted recoil from danger and attendant anxiety cause greater restriction of the blood circulation, with the development of angina and subsequent attacks. I believe the recent events concerning the President and the complete enlightenment and security offered in his management prove the point.

The unconscious mental reactions have been well worked out and recorded in thousands of similar cases. If one takes the time to investigate and think of the human as having an unconscious mind, a better understanding of these reactions will be obtained. Then the conceptions of both the mental sphere and the physical as related in the unconscious mind can be understood and, thus, the insult or disease felt by the body and the anxiety felt mentally.

Anxiety

Anxiety is such a basic concept that it should be investigated more carefully. Its effects are mediated from the higher cerebral centers through the hypothalamus to the autonomic nervous system. Pain in the body is caused by pressure changes or spasm of a part, organ, or blood vessels and is commonly caused by anxiety. Freud discovered two main causes for anxiety which may originate primarily in the mental sphere or secondarily in the mental sphere subsequent to the reaction of pain in the body. Anxiety is something which is felt. It is felt mentally, or it may be felt in an organ or part of the body. Since it may be felt mentally or produce physical changes and sensations, an affective state is said to be present. The person feels this state to be disagreeable or unpleasant. Excessive discharges occur with anxiety, an indication of an excessive underlying excitation. Since this state of anxiety is usually relatively constant or chronic over a period of many years its origin has to be looked for in the history of the individual.

Anxiety, it has been observed, always occurs in the face of some real or external danger as in the trauma of an automobile accident or war, but what of the anxiety that occurs without the presence of an external danger? It must occur from an internal danger; that is, from within the person. The infant feels secure when he feels loved and protected. When he is left alone or feels the loss of his protector he becomes frightened. The infant's feeling of helplessness and fright causes a state of anxiety. It can be realized that what is registered and maintained in the infant's unconscious is the fear of loss of his most highly prized object, his mother. This real or feared loss may spread to include parts of his body; he fears mutilation and destruction. All through an individual's infantile development and childhood, he may constantly be subjected to these real or threatened deprivations.

In the earliest oral stage of development the infant feels deprived of the breast at weaning. When the infant at toilet and bowel training must give up the stool to please the mother he feels a loss of bodily contents. In the phallic stage of development, the penis is the center of attraction and is highly prized. In the Oedipus situation the penis is hypercathected, and the child fears the direct or indirect threat of castration as a retaliation for his sexual feelings toward his mother. The child also develops anxiety from another source at this time, anxiety due to the lack of maturity, either physical or mental, to cope with the excessive sexual excitations in the unconscious. The anxiety is felt and experienced by the individual and becomes to one degree or other a fixed pattern of reaction to all situations of deprivation or threat, similar to the Pavlovian concept of a conditioned reflex.

Role of libido

Another source of anxiety is that felt by the ego from a severe strict and punitive superego, in which the ego cannot live up to the demands of the superego. Freud at first felt in investigations that anxiety was really due to excess and dammed-up libido. The only way in which discharge was possible, since all other avenues of discharge or means of gratification were closed, was in the form of anxiety. This idea is not held to be important in the causation of anxiety. It is contrary to the pleasure principle and the purpose of instincts. However, it is still true that excessive libido or a threat to the ego which provokes an excessive libidinal charge causes a reaction of fear. The basic sexual energy in this case will be used to protect the individual's ego in case of danger.

This becomes more clear if it is remembered that the ego is largely a body ego and, in the mind, the general body structure is represented. With this unconscious awareness of one's own body parts, the libido in diseased, traumatic, or painful states is directed to the body. This is a protective mechanism whereby libido is used to make up for the weak spot in the body ego. In chronic disease states, constitutional or developmental weakness, or when the ego is threatened by loss, mutilation or castration, or destruction, excessive supplies of libidinal energy may be directed to the corresponding areas of the body. Hypochondriacal symptoms will result from such an excessive distribution of libido.

Conclusions

I have attempted to clarify the term "unity of mind and body" and, in a small way, to show what psychoanalysis has contributed to the field of medicine. It has been predicted that medical schools and large teaching hospitals eventually will be headed in the clinical services division by the department of psychiatry since all illness has psychologic aspects. Patients would be sent to other necessary departments for diagnosis and therapy and then returned to the department of psychiatry for further direction or therapy. If this prediction comes true, medicine in the future will revolve more about psychiatry and the team of clinical psychologists, social workers, psychiatrists, and psychoanalysts. Depth psychology does not stress therapy, but it provides the most complete understanding of the human personality known today.

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Freud: Scientist and explorer of the unconscious

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AT THE AGE OF 9 YEARS, a year earlier than usual, Sigmund Freud passed his high school entrance examinations. He then distinguished himself in that curriculum, standing first in his class for six consecutive years.[1] At 17 he was graduated *summa cum laude*. Reluctantly, he went on to study medicine—one of the few professions open at the time to a Viennese Jew—as the closest approach to his interest in human concerns.

In his early studies at the University of Vienna, he was drawn to some experimentation in both chemistry and zoology, but it was the influence of the famous physiologist Brücke that channeled his interest.[2] Brücke was a member of the group that initiated and maintained the scientific study of medicine led by Helmholtz. This dynamic and rationalistic philosophy had a strong and lasting effect on the young medical student. During his 6 years at Brücke's Institute of Physiology, where he was also influenced by Fleischl-Marxow and Exner, he became well grounded in the principles of that discipline which he was later to apply so brilliantly to mental phenomena. His first contribution to science was one in technic—a new formula for the microscopic preparation of nervous tissue. During the first 2 years at the Institute, Freud climaxed a series of painstaking experiments with the discovery of the transitions from bipolar to unipolar of the spinal ganglion cells of the fish Amoecetes (Petromyzon). This was refreshingly noteworthy in contrast to his work 2 years earlier which was an inconclusive corroboration of Syrski's observations on the male organ of the eel. Next Freud devoted himself to the microscopic study of the nerve cells of the crayfish. In this endeavor he made an important technical innovation which facilitated his work—the gold chloride method of staining nervous tissue. He was the first to demonstrate that the axis cylinders are without exception fibrillary in structure. In so doing, he mastered a microscopic technic very difficult at that time. These researches seem to have clarified in his mind the unitary concept of the nerve cell. Although Waldeyer established the "neurone" in 1891, following the early work of Wilhelm, Forel, and Cajal, Freud had already in his lectures given an outline of the concept 8 years earlier, although without having marshaled the proof.

The researches at the Institute of Physiology were collateral with his medical studies where his teachers were famous innovators in their fields: Billroth the surgeon, Hebra the dermatologist, and Arlt the ophthalmologist. He received his M.D. degree in 1881, taking 3 years longer than usual because of his broad interests and concern for knowledge rather than practice.[3] Then he remained with Brücke, pursuing his histologic work. It was at this time that he declined an invitation from the distinguished physiologist Hering to join him as his assistant. Two months later, he was promoted to the post of demonstrator in the Institute, and despite the heavy teaching load, he managed to spend the better part of a year (1882) in an investigation in the analysis of gases in Ludwig's Chemical Institute.

A career devoted to theoretical pursuits was too impractical. Thus on advice of Brücke, Freud very reluctantly left full-time research for the way of the practitioner. Having no experience with patients, he registered at the General Hospital of Vienna. He found the work physically tiring, and 2 months in the surgery wards were enough, so he took a letter of introduction from Meynert to the great physician Nothnagel, who held the Chair of Medicine. Since there were no openings as *sekundararzt* (a combination of house physician and registrar), Freud took the modest position of aspirant in the division of internal medicine. Six months later, his interest and the opportunity led him to accept the position of *sekundararzt* in Meynert's psychiatric clinic. He gained basic experience there for 5 months until he moved on to von Zeissl's department of dermatology. The duties during these 3 months were light so he attended special courses in nasolaryngology.

In January of 1884, he began 14 months in the department of nervous diseases, following Meynert's suggestion that he specialize in neurology;[3] he rose in rank to senior *sekundararzt* and published three clinical neurologic contributions ("A case of cerebral hemorrhage," "A histological method for the study of brain tracts," and "Structure of the elements of the nervous system").[2]

It was also during this time that Freud published his investigations of the clinical action of cocaine and, although his surmise was correct that its action is due to an abolition of the effect of agencies that depress one's bodily feelings, he had held it forth only as an analgesic. A friend, Carl Koller, followed his suggestion and made the crucial experiments upon animals' eyes which were published as evidence of the anesthetic effect.

After a year in neuropathology, Freud's experience in clinical neurology rose to the point where he was able to localize a lesion in the medulla oblongata so accurately that the pathologist had nothing to add, and he was the first in Vienna to send a case to autopsy diagnosed as polyneuritis acuta. His fame in diagnosis spread so that physicians came from America to listen to his lectures at the clinic.

He was encouraged by Nothnagel to apply for the title of *privatdocent*, a position similar to that of an Oxford don who holds classes, usually on topics outside the regular curriculum.[3] While this application was in progress, a difference of opinion with his chief (Scholz) concerning administration resulted in Freud's being transferred to the ophthalmologic department. It was also during this time that Freud published the first of three papers of original contributions to the structure and function of the medulla oblongata; these were derived with an ontogenetic method which he elaborated from a suggestion by Flechsig.

Three months later (June 1885) he was invited to act as *locum tenens* in a socially superior private mental hospital. A few weeks later he received the news that he was the successful candidate for the ministry's prize of a postgraduate traveling grant. Freud had looked forward to pursuing his neurologic work under

the great Charcot in Paris. He resigned from the General Hospital in August, was appointed *privatdocent* in September, and arrived in Paris the next month.

Freud spent 4½ months as a student under Charcot at the world famous Salpêtrière, becoming the translator of the new series of "Leçons" and gaining through Charcot's presentations of hysteric patients an appreciation of the role of sexuality in psychoneuroses.[4] He tried to continue his anatomic research, but the facilities in Paris were too poor. Instead, he began a book ("Introduction to Neuropathology") which was left incomplete as he turned his attention to writing a volume on the anatomy of the brain.

He left the Salpêtrière in February 1886, stopping for a few weeks in Berlin to observe the general diseases of children. This was in preparation for accepting the post as director of the neurologic department in the first public Institute for Children's Diseases under the famed pediatrist Kassowitz.[3] He also opened an office for the private practice of neuropathology, while each morning was devoted to his anatomic work on the medulla at Meynert's laboratory. It was the observation of Meynert's amentia (acute hallucinatory psychosis) that first gave Freud a vivid impression of the wish-fulfillment mechanism which he applied so brilliantly in his later investigations of the unconscious.

While occupied with setting up a practice, running a department, and doing research, Freud published nothing original until 1888, when he reported on hemianopsia in children which was hitherto unknown. He suggested that hemianopsia on the paralyzed side observed in apoplectic coma resulted in the eyes looking toward the side of the lesion. For some while he had lectured on aphasia, but it was not until 1891 that he published a book by that title. There can be found a prelude to the concept of the significance of language in the different strata of the mind.[1] At that time it was a radical criticism of the Wernicke-Lichtheim doctrine of subcortical lesions in the associative paths. He posited a functional explanation citing Hughlings Jackson's view of "disinvolution." Freud distinguished between the naming and recognition of an object, coining the term "agnosia" for the latter defect.[3] Even today, controversy persists between the dynamic and static aspects of localization first brought out by Freud.

Later in that year, together with Oscar Rie, he published a definitive volume on the unilateral paralyses of children, in which they identified for the first time a new syndrome of "choreatiform paresis" and suggested a common etiology for acute poliomyelitis and cerebral hemiplegia (modern encephalitis).[2] Two years later, Freud published a monograph on central diplegias, and with that, all forms of childhood paralyses were investigated. Having become the leading authority on children's paralyses, he continued for some years to write that chapter in the "Yearbook of Neurology and Psychiatry." By 1900, he had completed the grouping of the various paralyses into distinct units, which even now is recognized as the definitive work in this area.

As a neurologist of the period, Freud wrote a paper in 1892 on successful treatment by hypnotism which he used in the manner of direct suggestion, together with rest, baths, and massage. In that paper, some incidental remarks concerning the existence of antithetical ideas were the first shadows of what later developed into the concept of the unconscious; these ideas evolved from his insight into the phenomenon of posthypnotic suggestion when he observed ideas which were unconscious and yet dynamic.[3]

The following year, from his notes at the Salpêtrière, Freud wrote an article distinguishing the three cardinal differences between organic and hysteric paralyses; (1) Hysteria is confined to one part of the body, while organic paralysis, when intense, is accompanied by extensive distribution; (2) hysteria shows more sensory changes than motor, while the opposite is the case in organic paralysis; and (3) organic paralysis shows an anatomic distribution whereas in hysteria, distribution is ideational. Later that same year (1893), Freud and Joseph Breuer published together a paper on the transference manifestations of hypnotic treatment. In this is the first mention of the memory of a trauma in the etiology of emotional disturbance and the first assumption of unconscious processes, detailing only the existence and strength of such forces. These efforts culminated in a paper by Freud, "On the psychical mechanism of hysterical phenomena," which was later to become the first chapter in the "Studies."[4] Previous to this communication, neuroses were regarded as physical conditions; since then they have been recognized as manifestations of deep emotional conflicts within the personality.[1] In this work Freud came to grips with a problem that had never previously been stated—dynamic psychopathology.[3]

During the period from 1892 to 1895, there was a great ideological change in Freud, which was stimulated by Breuer's recounting to him the case of the now famous Anna O. Breuer had used a cathartic method during hypnosis to achieve a cure, and Freud also attempted this. Freud studied hypnotism at the Nancy School under Liébault and Bernheim. However, Freud made more extensive investigations, and the refractoriness of hypnosis as a general technic led him gradually to evolve the method of free association which opened the door to the unconscious mind and ranks as Freud's greatest discovery.[2,4,5] With his strict scientific training he held to the principle of determinism in following free associations. It was from these deductive observations that he elaborated and consolidated the concepts of resistance and repression.[5,6] This culminated in 1895 in the "Studies in Hysteria"[7] in which Freud's conclusion as to the essentiality of the sexual life in the etiology of neuroses led to the defection of Breuer, who had contributed the term "unconscious" in the dynamic sense. From then on, Freud worked alone and finally developed the psychoanalytic technic. All his later efforts stem directly from the "Studies," ". . . the *fons et origo* of psychoanalysis."[4]

It was in 1897 that Freud discovered that the sexual reports of his patients did not check out. He then had to revise his theory of sexuality to account for these fantasies, and he postulated that psychical reality must be taken into account along with actual reality. This proved to be the key to the riddles of both infantile sexuality and dreams. Also, he had observed even a year before[3] that the unconscious is not only made up of the original memory traces (labeled by critics who were impressed by the content as "a sink of iniquity"), but it also holds the derivatives of the conscience; thus, the unconscious contains elements of both the "highest" and "lowest" in man.

The unconscious, so often postulated but unexplored, was broached through Freud's investigations of this psychic area in his own mind. His work on the "Interpretation of Dreams" proceeded simultaneously with this endeavor, as well as the observations which later led to the writing of "Three Essays on the Theory of Sexuality." The manuscript for the book on dreams

was sent to the publisher in 1899 (although it was essentially completed 3 years before). This major opus, which has received only a minimum of modification in the following 50 years, remains Freud's greatest contribution to science; it contains a secure basis for the theories of the unconscious and sexuality, as well as suggestions for education, literature, and mythology. Before the advent of the book, the concept of unconsciousness enjoyed a rather general acceptance in high scientific circles. However, after 1900 it met with many challenges, owing, no doubt, not to the concept as such but to its content which Freud revealed. However, students of Freud will appreciate his delineations, not so much of either the existence of the unconscious or its content but, rather, of the different kinds of mental processes to be found there and their descriptions. The unconscious is a seething flow toward wish fulfillments, being unchecked by logical contradiction and without sense of time or reality. Its emotional charges are freely interchangeable one with the other and may accumulate or disintegrate. Its goal is only the discharge of its excitations through either an activity or a perceptual identity with a prior satisfaction. He later went into the metapsychology (topographic, dynamic, and economic appreciations) of the unconscious,[8] and the concept remains relatively unaltered to this day although the use of "unconscious" as a topographic description has given way to the term "id."[9] In retrospect, Freud's psychologic contributions seem to be exquisitely penetrating detailed studies of concepts which he had held almost from the first.

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Transference and countertransference

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In all types of psychotherapy there are technical problems and phenomena which are specific and unique to each individual case, and there are those that arise in every case, no matter what the diagnosis. Transference and countertransference are examples of the latter. Although these phenomena arise in all types of psychotherapy as well as in daily experiences, Freud and other psychoanalysts have given the greatest impetus to the understanding and utilization of them and their vicissitudes in the attempt to reintegrate personality. The terms "transference" and "countertransference," as used in this paper, refer to the unconscious reactions of the patient toward the analyst and the unconscious reactions of the analyst toward the patient, in the treatment situation. They are the irrational, infantile, ambivalent emotional responses that interfere with the progress of the analysis, but are normal phenomena derived from repetition compulsion.

Breuer and Freud[1] presented for the first time in "Studies in Hysteria" a most significant discovery that has since been recognized as one of the cornerstones of psychoanalysis. They delineated very clearly the concept of transference, its origin, and its technical and therapeutic importance. It was explained how Breuer, in an attempt to cure the patient, utilized intensive, suggestive rapport. This served as the prototype for what is now called "transference." They said that these transferences are reproductions and reimpressions of the emotions and fantasies that have to be awakened and brought into consciousness during the progress of analysis; they are characterized by the replacement of a formerly known person by the physician. In the case study of Dora, Freud indicated that transference could be utilized as an ally in treatment, and he considered its dissolution a condition for the disappearance of symptoms.

Ferenczi[2] and Abraham[3] both considered this concept in early important papers. Abraham emphasized the importance of the relationship between transference manifestations and the libidinal position of the patient. Ferenczi concerned himself more with the relationship between transference and introjection. He felt that the analyst assumed the role of the introjected parents and that the process of tranference allowed the patient to run away from his unconscious conflicts and to displace onto objects of his immediate environment the floating libido which had not been converted into or substituted by symptoms.

In 1912 Freud's[4] paper, "Dynamics of the Transference," described the phenomenon as a constant repetition of a stereotyped pattern throughout life that governs the conditions under which another person can be loved. He felt it was a product of unconscious tendencies which had been frustrated and repressed, and of resistance, which tends to replace memory by action.

About 2 years later another paper[5] foreshadowed the ideas that were later developed in "Beyond the Pleasure Principle,"[6] by emphasizing the concept of the repetition compulsion and its relationship to transference. In this paper, Freud discussed the infantile and repetitive character of transference love, its lack of regard for reality, and its intensification by resistance and by the analytic situation itself.

Mechanically, the phenomenon is related to Zeigar-

nick's[7] experimental work, in which he demonstrated that tasks which have been interrupted are not only willingly resumed, but are relatively better accomplished than those that have been completed without interruption. Zeigarnick felt that the narcissistic wound attached to the frustration of the interruption increases the inner need to complete the task.

Lagache,[8] considering the relationship between transference and the Zeigarnick phenomenon, as well as positive and negative transference, schematized the origin of repetition manifested in the transference as follows: (1) Infantile experience is a series of trials and errors which usually end in failure or frustration and in narcissistic mortification. (2) Primary repression, not necessarily a final renunciation, results from predominant ego defenses. Hope for future success remains and facilitates repression of the feelings and ideas which are connected with the postponement of the interrupted task. (3) Transference then results from the persistent tensions that accompany and develop from the repressed ideas and emotions. The narcissistic blow stimulates action of ego defense mechanisms as well as the need for repair.

During the revision of Freud's theories, transference was shown to be the connecting link between psychoanalytic theory and practice, especially as proof of the sexual origin of the neuroses. In "Beyond the Pleasure Principle," Freud[6] re-emphasized and extended the concept of the repetition compulsion and its relationship to transference and to infantile sex experience. He felt at that time that it is independent of the pleasure principle and that it constitutes a real barrier to the termination of analysis by preventing free association. This fact led to greater awareness of the real need for constant interpretation of the transference relationship during the entire course of the therapeutic process.

Alexander[9] severely critized Ferenczi and Rank for stressing the affective quality of the analytic process and emphasizing the importance of abreaction. He felt the goal of analysis should be to free bound energy and to strengthen the ego and that certain infantile memories could be repeated only in the transference. Two phases of the latter were described: (1) The conflict between the superego and id is changed into conflict between the id and the analyst. (2) The functions of the superego are restored to the ego of the patient by interpretation and working through.

Sachs,[10] on the other hand, favored the active technic of Ferenczi in the attempt to establish contact between the ego and the id of narcissistic patients. He felt the tranference was an attempt to reproduce libidinal positions which had been only partially overcome by the patient during childhood. Therefore, the terminal phase of treatment should be an attempt to rechannelize the repetitive behavior of earlier experience by remembering and working through those experiences rather than continuing to relive them in an incomplete, infantile manner.

In all types of psychotherapy there are technical problems and phenomena which are specific and unique to each individual case, and there are those which arise in every case

Rado[11] compared tranference neurosis, hypnosis, and preanalytic forms of psychotherapy. He felt that the last fostered the establishment of a transference neurosis without the possibility of its dissolution. This was caused by the lack of working through and no attempt to interpret the transference. Of course, this means that other more superficial forms of psychotherapy serve more to reinforce infantile, ambivalent patterns of behavior than to rechannelize the discharge of inner forces for satisfaction in terms of present reality.

At the Psychoanalytic Congress of Marienbad, it was decided that the concept of transference should be enlarged to include displacement but to extend beyond it. The Congress agreed with Nunberg[12] that repetition compulsion is a factor in the cure of patients, rather than an obstacle, and recognized that certain technics, including the silence of the analyst, favor the development of transference. They also accepted Glover and Brierly's[13] suggestion that the analytic treatment of the transference contains nuances that are not purely analytic and that the unconscious attitude of the analyst toward the patient has a therapeutic and strengthening effect.

In their work with children, the conflict of ideas of Anna Freud[14] and Klein[15] included the concept of transference. Anna Freud believed that young children do not develop transference neuroses in the complete sense, as adults do, because of the lack of superego development. She felt it could only develop if the child were removed from the family. Klein criticized these conclusions with the presentation of her theories of the much earlier development of the superego. In the light of her theories, the development of transference and the role of the analyst in child analysis are the same as in the analysis of adults.

Since the late 1930's there have been many critical reviews of the theory of transference. With Horney's[16] theoretical deviation from the orthodox point of view, she gives less importance to the disposition to transference and the repetition compulsion. Of course, she felt that the primary aim of psychoanalysis is not that of relating the present to the past, but in emphasizing the reaction of the total personality in the world of people today. Some analysts would question her approach to personality problems and call it psychotherapy rather than psychoanalysis. There are, however, some resemblances between her ideas and those of Alexander and the Chicago School, which in turn show the influence of Anna Freud's thinking.

A paper by Silverberg[17] described transference as a repetition which attempts to rectify a traumatic situation by action. Transference, in the attempt to deny objective reality, is always irrational, ambivalent, and disagreeable. Silverberg spoke of *a* transference rather than *the* transference.

Macalpine[18] stressed the fact that all obstacles to the process of regression that accompanies the development of transference are expressions of resistance. One example of this is the flight into health. She de-

fined transference as the gradual adaptation by regression in the infantile atmosphere of the analytic situation. She expressed some doubt as to whether psychoanalysts fully understand the resolution of the transference, because actual resolution occurs after termination of the treatment.

About a year later Nunberg[12] reintroduced Freud's concept of perceptual identities. There is an identification of past with present experience when repressed ideas and feelings are revived by present perceptions and perceived as actual experiences of the present. Nunberg felt this tendency is the basis for acting out and is an aspect of the repetition compulsion. The latter, however, turns toward the past, while transference turns toward reality in the attempt to discharge and satisfy old forces.

In review, the literature on the theory of transference indicates some confusion about many aspects of the concept, including the definition. Typically, though, it might be defined as an emotional attitude of the patient toward the analyst, based on earlier, repressed feelings toward others and having no basis in the reality of the analytic situation itself. It is the irrational, ambivalent behavior of the child that has carried over into adulthood, blocking healthy adjustment, through new patterns, to real, present situations. Does this mean, then, that the irrational, ambivalent, infantile elements are exact reproductions of earlier experiences? I am in agreement with Schmideberg[19] that it is not necessarily so but that elements of present situations may revive infantile attitudes, and so the analyst may become the object of projection and displacement from them.

Since the time when Freud[4] first concerned himself with countertransference, the literature on this concept seems to include variations of all kinds of emotional reactions on the part of the analyst toward the patient. One point of agreement among most modern workers, however, is that the analyst cannot possibly function exclusively as a "mirror," as Freud suggested. It is felt to be humanly impossible for the analyst to maintain a completely detached and impersonal attitude at all times.

According to Gitelson,[20] differentiation must be made between beneficial reactions not considered countertransference, reactions to the patient as a whole which represent residual neurotic transference reactions, and reactions to partial aspects of the patient, true countertransference. The latter two are considered interfering emotional responses, and their recurrence in the analytic situation points up the interminability of analysis and the fact that no one is ever completely analyzed. As indicated here, the term "countertransference" applies only to emergency defensive reactions to the patient's productions, or to defenses against what the analyst discovers of himself in the patient; that is, the emotional response to the content of the material presented by the patient. Waelder,[21] combining Gitelson's last two points, considers countertransference only the analyst's transference to the patient, partial or whole. Anxiety has been considered the basis for all countertransference reactions, and so some workers have considered only anxiety-producing responses in the analyst as countertransference. An extreme concept includes only sexual impulses toward patients as countertransference. The major differences seem to center about the analyst as a mirror or the analyst as a human being.

Compared to information and work done on transference, that done on countertransference is relatively scarce. This is due to many difficulties in presenting problems of the latter for discussion. The small amount of clinical material is due to the resistance toward awareness of countertransference among analysts. This is comparable to the resistance to transference insights in patients. There are other practical reasons for the scarcity of information, which center about the fact that the analyst must concentrate on keeping the analytic situation well in hand and, therefore, is primarily occupied with the patient's reactions.

The most valuable and only real way of attempting to control untoward countertransference reactions is through personal analysis of the analyst. This is of considerable help in the achievement of ability to maintain a neutral or objective attitude while reflecting the patient's own feelings and thoughts. Does it completely eradicate erotic behavior toward patients? Is no form of erotic behavior on the part of the analyst to be tolerated? The answer to these questions is no, because analysts cannot exert conscious control over unconscious processes any more than other human beings can. This artificial attitude is as detrimental as would be the acting out of countertransference behavior by the analyst and is a type of rigid defensiveness.

Tower,[22] in a recent paper, explained that fantasies and emotional reactions of all kinds are to be expected and are normal, especially when they are related to reality. If the feelings seem to be excessive or inappropriate to what is taking place in the analysis, such as stimulating impulses toward action or those associated with anxiety, there should be an attempt made to find countertransference significance. Sharpe,[23] for example, always analyzed her dreams about patients. Tower[22] also emphasizes the positive value of countertransferences. On the premise that these reactions are normal and ubiquitous, she relates the necessity for countertransference affects to the fact that true insight is achieved only when the analysis of transferences is accompanied by appropriate releases of affect. She points out further that these reactions are inherent and dynamically operative in all treatment procedures, but that countertransference is only one of many important responses of the analyst to the treatment situation. Others included are empathy, rapport, intuition, intellectual comprehension, and egoadaptive responses.

Summary

An attempt has been made to survey briefly the literature on the phenomena of transference and countertransference, to clarify their meaning and to try to convey the importance of these concepts in successful treatment.

Both these phenomena are inherently dynamically operative in all treatment procedures, but are dealt with directly only in intensive psychoanalytic therapy. The fact that these phenomena constitute a real barrier to the successful termination of analysis by preventing free association on the part of the patient and a neutral objective attitude on the part of the analyst points up the real need for continual interpretation of the transference relationship and continual search for countertransference manifestations of the analyst. Both of these areas might prove to be fruitful in terms of future experimental studies that would give greater insight into their operation during the treatment procedure.

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The pathology of cerebral CONCUSSION

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ONE OF THE MOST frequent problems the neurologist deals with is that of head injuries. Head injuries involving skull fractures, cerebral lacerations, subarachnoid hemorrhages, and hematomas are major problems, the pathology and treatment of which are quite well understood. The same cannot be said for cerebral concussion. This is true because the pathologic changes of cerebral concussion are difficult to demonstrate. Usually the patient survives, and there is consequently no opportunity to study the damaged brain. In those patients who die, there is typically no evidence of gross pathologic changes.

My interest in cerebral concussion has been brought about through handling and attempting to treat two widely different consequences of concussion. First, while a resident at the Los Angeles County Osteopathic Hospital, I saw a number of patients with head injuries. It was a satisfying experience to perform trephinations and evacuate hematomas and hygromas and, in due time, have the patient change from a moribund state to one of apparent good health. One of the most upsetting experiences was to have a patient die with no gross demonstrable damage to the brain.

All deaths were coroner's cases, and reports were awaited with considerable interest. Frequently the report came back stating that no demonstrable gross damage could be found and that microscopic sections were being studied. It was then for the first time that the realization came to me that death could ensue from changes in the nerve cells demonstrable only on microscopic examination. It did not solve the problem of whether anything could have been done to save these patients' lives other than what was done in maintaining fluid and electrolyte balance, insuring a proper airway, treating shock, and maintaining spinal fluid pressure at near normal levels.

Secondly, my interest has been directed toward cerebral concussion because of the occurrence of troublesome and sometimes disabling postconcussion symptoms of headaches, vertigo, and nervousness without positive neurologic findings. These often occur after mild or moderately severe concussion. It is a circumstance that seems particularly objectionable to insurance companies, insurance company doctors, and opposing lawyers.

A definition of concussion satisfactory to all is almost impossible. The condition is usually defined in terms of its chief symptom, loss of consciousness. For example, Voris,[1] in discussing craniocerebral trauma, has stated that the term "concussion" should be reserved for those cases in which there is transient loss of consciousness, due to a blow on the head, unassociated with evidence of local brain damage. While this is the generally accepted definition, it is not a satisfying one because it does not take into consideration those cases of concussion in which the patient is only dazed, or those cases of more severe concussion in which the patient dies. Also nothing is said of the pathology of concussion.

Courville[2] concluded that concussion is the direct effect of shock on cortical, ganglionic, and medullary centers with a derangement of the constituent nerve cells. On the basis that the length of the period of unconsciousness is a fair index to the severity of the concussion, he used this as a measuring stick to construct a rough classification. This is included here because it is valuable clinically.

First degree concussion consists of transitory motor weakness, dizziness, or blurring of vision without impairment of consciousness. There are paralytic cortical phenomena only. This type is typically seen in

some instances of gunshot wounds of the head.

In second degree concussion the patient is only dazed or stunned and does not completely lose contact with his environment. The cortex is affected with immediate onset of paralytic motor phenomena, but the center of consciousness in the subthalamus is only mildly disordered.

Third degree concussion represents the state generally considered as concussion in contemporary thought —craniocerebral injury with only transitory loss of consciousness lasting not more than several minutes.

In fourth degree concussion the patient is unconscious from 1 to 6 hours, but there is no gross damage to the brain.

In concussion of the fifth degree unconsciousness is sufficiently prolonged to arouse the suspicion that a gross brain lesion may be present. The course is often progressively downhill, but in many instances after days or even weeks of unconsciousness the patient survives with no clinical evidence of brain damage.

Sixth degree concussion includes those cases in which the individual dies within a short interval following cranial trauma, but in whose brain there is found no gross injury or only scattered petechial hemorrhages. In some manner, the shock of the injury so affects the medullary centers as to render them incapable of survival.

Seventh degree concussion consists of those cases in which the patient dies almost instantly after a blow to the head.

If Courville's definition and classification are accepted, it seems apparent that more damage must be present in cerebral concussion than is commonly thought to be the case, even though it may not be grossly evident. In reviewing the literature, I have found this to be true. Significant damage in cerebral concussion has been demonstrated in five different ways:

1. Cytologic changes in the neurons of the brain.
2. Evidence of circulatory disturbance.
3. Electroencephalographic evidence of impaired function.
4. Biochemical evidence of altered physiology.
5. Evidence of altered permeability of the cell membrane.

Manifestations

Regarding the cellular changes, it has been believed that cerebral concussion resulted in no demonstrable microscopic findings. The work of Windle, Groat, and Fox,[3] Groat and Simmons,[4] and Groat, Windle, and Magoun[5] indicates that this is not true. They observed differential chromatolytic changes in the pyramidal cell of the motor cortex of monkeys and in the brain stems of both the guinea pig and monkey following cerebral concussion. These changes were unassociated with the glial reaction, interstitial hemorrhage, and fiber degeneration and were apparently due to uncomplicated concussion. In the first experiment, twenty-nine guinea pigs were struck blows ranging from too light to produce concussion to very strong and were sacrificed after periods ranging from 4 hours to 32 days. All except two which received only light subconcussive blows showed definite cytopathologic changes. At the end of 14 hours, disorganization of the Nissl body pattern and even lysis could be determined; and at the end of 24 hours disintegration of Nissl bodies, that is, chromatolysis, could be clearly observed. After 2 days many cells showed marked changes, which reached maximum intensity by the sixth or eighth day. Progressive chromatolysis culminated in destruction of some nerve cells. These changes were observed in neurons of all sizes, but large cells such as those of the red and lateral vestibular nuclei were most affected.

Groat and Simmons[4] demonstrated a considerable loss of cells in the brain stem of guinea pigs which had been subjected to concussion by a single blow 13 months earlier. The loss in the reticular formation varied from 19.4 per cent to 38.8 per cent. They concluded that some cell loss will occur in all concussions, even in extremely light ones and in some subconcussions.

In their experiment on rhesus monkeys, Groat, Windle, and Magoun[5] sacrificed the animals at intervals, the longest being 8 days. Large neurons of the red nucleus, pontile reticular formation, vestibular nucleus, superior olivary nucleus, and reticular formation showed chromatolysis. Many cells contained no Nissl bodies. Eight days after concussion, changes were clearly observed in the large motor cells of the cerebral cortex. Some large pyramidal cells appeared shrunken and hyperchromatic with disturbance of the Nissl body pattern. It was concluded by these investigators that the changes they had observed were due solely to cerebral concussion and that there were no other complicating occurrences such as interstitial hemorrhage and glial reaction. These workers admitted that functional phenomena of concussion and their relationship to these cytopathologic changes are unknown.

Rand and Courville[6] reported observations on tissue studies from thirty-nine cases of fatal head injuries. Some patients died at once; others died many days later from the effects of head injury or from other causes. Alterations were found similar to those described after experimental injuries; in addition, there were some other findings. In the patients who died immediately, there was no evidence of cytologic changes. The earliest changes noted in the Nissl body pattern was a perinuclear loss of trigroid material. Chromatolysis advanced rapidly after 12 hours, and after 24 hours, in some cases, most of the pyramidal cells were affected by the process. These changes were also very marked in the Purkinje cells. Other alterations noted were nuclear aberrations in the nature of vacuolar changes which the investigators believe were due to cerebral edema and alteration in the chromatin material of the nucleus. They also felt that there was some, but not appreciable, alteration in the neurofibrils. After injury they also found an increase in the volume of the epithelial cells of the choroid plexis and ependyma and an associated increase in cellular vacuolation indicative of increased cerebrospinal fluid production. In certain cases there was acute swelling of the oligodendroglial cells, particularly those in the white substance of the brain, together with a generalized increase in number of these cells. The vacuoles in the oligodendroglial cells apparently represented accumulation of fluid within the cells. The researchers believed these represented cerebral edema. The authors pointed out that since these patients died shortly after injury these findings would not necessarily parallel the findings in the usual milder forms of cerebral concussion. However, they felt that it was probable that the differences between the changes noted here and in milder forms of concussion were of degree rather than of kind. In addition, they believed that cerebral edema was an indirect consequence of vasomotor insufficiency caused by concussion of the autonomic vasomotor center.

Evidence of disturbed cerebral circulation after

concussion is shown by the presence of certain scattered areas of cell degeneration or avascular necrosis. Helfand,[7] in reviewing the microscopic and gross findings in twenty-two cases of fatal head injury in humans, came to the conclusion that many lesions following brain trauma may be discovered only with detailed microscopic studies. He found lesions distant to the traumatic zone consisting of ischemic cell changes or areas of avascular necrosis characterized by changes in staining quality of the nuclei, dissolution of the chromatin material, and changes in the shape of the cell. He felt that these changes were due to nutritional interference through temporary interruption of the vessels supplying the area. By careful investigation he was able to demonstrate that the vascular structure of the area was perfectly retained, and he therefore came to the conclusion that the lesions were due to a disturbance in the regulating influence of the vasomotor apparatus.

Rand and Courville[6] also found these areas of focal necrosis in injured human brains entirely unrelated to any traumatic focal lesion. They concluded that there was no reasonable explanation for such areas of focal cell loss other than that of an ischemic episode, presumably produced by vasospasm.

Further evidence of disturbed circulation is shown by the presence of multiple petechial hemorrhages frequently noted in human fatal cases of cerebral trauma and also in animals in which experimental concussion was produced. Schaller, Tamaki, and Newman[8] reported the presence of traumatic petechial hemorrhages in eleven human brains, where the interval of survival after trauma varied from an unmeasurable period or immediate death to 8 days. All brains showed parivascular petechiae, which were most frequent about the arterioles.

In experimental concussion in twenty albino rats, petechial hemorrhages were produced which were in all respects similar to those observed in traumatized human brain. The petechiae were widely distributed and were evident in both the cerebral and cerebellar hemispheres. In animals killed outright the hemorrhagic areas were represented by an accumulation of red cells in the Virchow-His space, which was generally dilated. No gross defect such as tearing of the vessel wall was demonstrated in complete serial sections. In animals killed at intervals up to 270 days, fresh petechiae were infrequently seen. In many of the animals glial cuffing around vessels represented replacement of former perivascular petechial hemorrhage. Also thrombosis and degeneration of vessels in animals killed after an interval were a marked feature of the pathologic picture, and in general these lesions followed the same localization as the petechiae. These changes were noted particularly in the arterioles, and in no case was gross softening noticed, the changes being manifest microscopically.

The investigators concluded that concussion may result in the production of petechiae by vasodilatation, prestasis, stasis, anoxemia, increased permeability of the vessel wall, and diapedesis, and that concussion may result in irreversible effects involving primarily the blood vessels and secondarily the surrounding parenchyma. The final state was obliteration of the damaged vessel and replacement gliosis.

Rand and Courville,[6] having noted the presence of multiple petechial hemorrhages in human fatal cases, believe that in those individuals who survive, the petechiae are absorbed without structural residuals.

Evidence of continued vascular instability is found in the experimental work of Friedman and Brenner[9] in evaluationg post-traumatic headaches. Twenty-two patients complaining of post-traumatic headaches were given 0.1 mg. histamine base (0.275 mg. of histamine diphosphate) intravenously. Of the 22 patients, 2 did not develop headache. In 13, histamine accurately reproduced the type and location of the post-traumatic headache. Four patients had several types of post-traumatic headache, one of which was reproduced by the injection of histamine. In 2 patients the distribution of the headache was slightly different from the post-traumatic headache complained of. In one patient the distribution of the headache was the same, but the quality differed. These results are surprising because typically histamine headaches are bilaterally symmetrical and generally frontal. In the series, headaches varied considerably from patient to patient. In 7 cases it was significantly or exclusively lateralized to the side of the head which had been traumatized. Interpreting their result, these workers concluded that there was persisting and localized increase of vascular sensitivity following trauma.

Electroencephalographic studies in cerebral concussion in general demonstrate that the impact of the blow responsible for concussion, whether or not accompanied by loss of consciousness, results in subtotal or complete cessation of cerebral electrical activity and that this state is followed by the appearance of abnormally slow waves whose persistence is roughly in proportion to the severity of concussion.

Jasper, Kershman, and Elvidge[10] studied the electroencephalograms of 37 patients admitted to the hospital with head injury. They noted dysrhythmia, even in patients who had very mild concussion or what they termed "questionable concussion" in which there was no history of unconsciousness. Dysrhythmias returned rapidly to normal, paralleling the clinical course of the patient. Dysrhythmias particularly noted or most common were the delta activity obtained either from a restricted area or diffusely from all regions of the head. This delta activity consisted of slow waves at frequencies of from less than 1 to 6 or 7 per second. Often the waves were irregular, occurring in a more or less random fashion so that it was difficult to assign any particular frequency to the disorganized pattern of slow waves obtained. The amount and type of delta activity were found to be the best single measure of the severity of cortical damage.

Marmor and Savitsky[11] made a study of patients having postconcussion syndrome who showed abnormal waves. The most consistent findings in the postconcussion syndrome were occasional short bursts of 6- to 8-per-second rhythms occurring diffusely in all leads. These slower rhythms were frequently of greater amplitude than the normal alpha waves.

Williams and Denny-Brown[12] demonstrated that in experimental concussions in cats, a blow on the head sufficient to cause concussion resulted in instantaneous and generalized diminution or cessation of electrical activity in the cerebral hemisphere, followed by the delayed appearance of slow waves which evidently represented a stage in recovery.

Further evidence of disturbed electrical activity of the brain in concussion has been demonstrated recently by Foltz and Schmidt.[13] Their experiment was directed toward determining the role of the reticular formation in coma following head injury. Nineteen monkeys received experimental concussion. After loss of con-

sciousness associated with respiratory irregularity and loss of corneal and pineal reflexes were produced, electrodes were placed in the reticular formation of the midbrain by surgical means. It has been determined that this central region is intimately concerned with consciousness. Electrolytic lesions of this area produced prolonged coma and lack of reactivity to environment. Electrical stimulation in this area will cause an arousal reaction in a dormant animal and is associated with changes in the electroencephalogram from a sleeping to a waking state. It is presumed that continuous sensory stimulation drives the reticular activating system and thus maintains the conscious state. In this experiment, the sensory-evoked responses in the reticular formation were uniformly and dramatically absent following adequate concussion but, under proper circumstances, spontaneously recovered after a time. In one case, delayed fatal loss of reactivity of the reticular formation occurred after a relatively moderate concussion, that is, only momentary apnea and flaccidity. The corneal reflex was absent for 2 minutes. Death ensued, but no significant brain changes were noted postmortem. It was postulated that unconsciousness produced by cerebral concussion is at least in part the result of the sudden loss of the sensory activation or driving of the brain stem reticular formation.

Evidence of biochemical abnormality in cerebral concussion was produced by Bornstein.[14] Various degrees of concussion were produced in sixteen dogs and twenty-seven cats. The brains of the traumatized animals never showed gross damage or rupture, although petechial hemorrhages or rupture of the superficial blood vessels was sometimes seen. Histologically, a mild degenerative disorganization of the Nissl bodies was sometimes noted in brains of animals sacrificed from 3 to 32 days after trauma. The cerebrospinal fluid from the traumatized animals was tested for the presence of acetylcholine and was found to contain estimable quantities, 2.7 to 9 gamma per cent, within a few hours after injury. Thirty-three control samples showed no indication of the presence of acetylcholine. The administration of atropine sulfate had a remarkable effect in abolishing abnormal electroencephalographic patterns and stuporous postconcussion states. Bornstein concluded therefore that acetylcholine is liberated in abnormal amounts by traumatized nervous tissue and that some of the liberated acetylcholine escapes destruction and diffuses into the cerebrospinal fluid where its presence may be determined. It also appeared that the acetylcholine so found contributed substantially to postconcussion symptoms.

Further evidence of biochemical changes in cerebral concussion was demonstrated by Spiegel, Spiegel-Adolf, and Wycis,[15] who incubated a buffered specimen of cerebrospinal fluid, from patients who had undergone cerebral concussion, with a section of cat's cord; tigrolysis in the anterior horn cells was produced. Similar treatment of the sections of cord with buffered specimens of cerebrospinal fluid from normal persons or with buffered Ringer's solution failed to produce such an effect. They postulated that the enzymes producing these reactions were nucleases causing a breakdown of nucleic acid.

Evidence of the increased permeability of the blood-brain barrier has been produced by Aird and his coworkers,[16] who experimentally produced cerebral concussion in cats and studied the distribution of cocaine intravenously administered. Significant rises in the concentration of cocaine occurred in the cerebral cortex after concussion in comparison to those occurring in control animals. They also found that preliminary injections of trypan red effectively prevented the increase in cocaine in the cerebral cortex after concussion.

White and his associates,[17] after experimental concussion in cats, found that there was an increase in the volume of the brain up to a maximum of 5.5 per cent. The degree of swelling was found to vary directly with the severity of the concussion. It made its appearance in about 15 minutes, reached its maximum between 5 and 24 hours, and subsided after 3 days. They concluded that the increase in brain volume was due to extravasation of fluid through the capillary walls and not to vascular congestion or to distention of the ventricles with increased amounts of fluid. The degree of swelling was sufficient to reduce the space occupied by the ventricular and subarachnoid fluids from its normal volume of 8 per cent of the intracranial cavity to 2 per cent. When, in addition, anoxia and a rise in the blood carbon dioxide level result from an obstructive airway, failure of the respiratory center, or respiratory depressant drugs, further swelling and congestion of the brain may lead to serious compression of the vital centers.

Conclusion

While it is usual for patients experiencing cerebral concussion to recover promptly and without apparent residua, in a small percentage of cases the individuals either die from the effects of concussion or have incomplete or delayed recovery. The material presented offers at least a partial explanation of the pathology in these cases and suggests that cerebral concussion is not necessarily a benign and completely reversible condition.

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Psychoanalysis in a case of ECDYSIASM

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THE CASE BEING presented must be viewed as an over-all pattern unit that is derived from the complex mosaic constituting the psychoanalysis of any case. It would be impossible to present the case history data on a day-to-day basis and maintain any continuity of procedure. Therefore, the material of a 3½-year analysis has been organized for a more comprehensive understanding.

At the time of her admission to psychoanalysis, this female patient was 24 years old. She had been referred by another physician whom she had originally consulted for various physical complaints. After a painstaking physical examination and extensive case history, the physician was of the opinion that the patient was suffering from emotional disturbances rather than any physical illness and accordingly he referred her for psychiatric estimation.

The patient was a normally developed young woman, extremely fashionably dressed, whose external appearance gave little indication of the extent of her underlying emotional turmoil. She was divorced, having been married for only 7 months at the age of 19 years. She obtained a divorce in Reno on the basis of mental cruelty. From the age of 20 until about 4 months before entering analysis, she had worked in burlesque, starting as an ingénue and in a short time being "graduated" to the rank of a strip-tease performer. In this role she became widely known.

She was an only child of parents who were married in their middle thirties. Both parents died following an automobile accident in Italy at the time the patient was 15 years old. The orphaned girl was taken into the home of a widowed maternal aunt who also was the executrix of the estate left to the girl upon her parents' death. She had attended a socially distinctive boarding school and had entered junior college at the age of 17. Her scholastic achievement was mediocre, but not through any intellectual inability. She became more socially minded with her entrance into junior college, and her social life crowded every portion of free time permitted by college rules. On several occasions in her first year at college she was reprimanded by the dean of women for returning to campus after hours. She did not start to smoke until she was 16 and did not partake of alcoholic drinks until she had reached 18 years of age.

Her life prior to the death of her parents had been rather restricted. Her father had been a reserved, austere individual in whose presence the girl had felt both attraction and discomfort. She had been closer to her mother, but even this closeness was irregular because of the parents' frequent journeyings to resort spots in both the United States and Europe. Her early developmental years were under the influence of a nursemaid and, later, a governess, until at the age of 10 she was sent to a day school during the school months and to camp for the entire summer. When she was 12 years old the child became a resident student at the boarding school and remained there until her graduation. At most, she saw her parents at holidays and seasonal vacations between school and camp. Her mental picture of her mother was of a rather petulant, ineffectual woman, pleasing in appearance, always complaining of fatigue but never being averse to parties, traveling, and leading a socially full life, particularly of the night club type.

All in all, neither parent seemed to display much open interest in the girl, but neither did they convey to her any impression of being rejected; she was "just tolerated" and provided with most of the material things she wanted but with a minimum of emotional response. Accordingly, the picture was derived of the patient as a rather lonely child whose interests from an early period were directed solely toward her own gratifications, providing they did not clash with the expectation of parents or governess. She made some acquaintances among her boarding school classmates, but such relationships were rather fitful and tenuous.

To clarify the description of this patient's psychoanalysis, the main aspects of her problem may be divided into several parts:

1. Her physical complaints which represented displacements.
2. Her sexual conflict which was combined with her unresolved Oedipal conflict and her penis envy.
3. Her aggressiveness and the seemingly unrelated ways in which it expressed itself.
4. Her exhibitionism as it tied into the above three aspects.

The course of the patient's analysis was not particularly prolonged or protracted when the depth of the unconscious determining factors is considered. However, there were quite a few stormy and emotional sessions and phases before the productive level of her analysis was reached.

In the beginning of her analysis, the patient, as could be expected, spent many sessions dealing with her physical complaints. An attitude of complete permissiveness was afforded her by the analyst in order to detect the hidden significance of these conversion symptoms as well as to establish a strong and workable positive transference. Her physical complaints were backache, headache, stomach discomfort with occasional nausea, and occasionally some slight cardiac palpitation accompanied usually by a sensation of respiratory distress and chest oppression. In the beginning of the analysis, it was necessary for her to urinate before commencing her analytic sessions; later, as the analysis progressed, only at certain times when some specific topics were being dealt with in the analytic session did she have to urinate. After about 6 months these physical symptoms gradually subsided, except the headache and polyuria, although these too were lessened considerably in degree. All of these symptoms represented displacement from the sexual conflict and frustration as well as the repressed hostility.

As her analysis progressed to deeper levels she started to alternate in her acceptance of the analyst as

a mother-figure at one time and a father-figure at another time. Her anaclitic tendencies were shown by attempts to develop a very definite outward form of depending on the analyst, her attention hanging upon the slightest and most casual remarks or movements made by him during these sessions. She would often arrive as early as a half-hour before her appointment and would try to delay departure at the end of sessions by attempting to engage the analyst in light conversation or by prolonging her rising from the couch. When she did not obtain the sought for response from the analyst, she would walk rigidly out of the office, sometimes with a caustic remark about him or about the next patient.

As these acts in time did not produce any response from the analyst, she began to wear a new or different outfit at each successive appointment and would allude to these by pretendedly casual remarks such as, "Well, you don't seem to notice when I wear anything new to your office," or "I saw this dress yesterday and I just couldn't avoid buying it because it fits me so well, doesn't it?" On several occasions when she got up from the couch she carefully examined the seams of her stockings, presumably to see if they were straight, raising her skirt somewhat higher than was necessary, with a quick furtive glance toward the analyst. On two or three occasions she remarked that she was afraid she would have to start to wear a girdle pretty soon, in a tone that expressed her realization that this was not really likely to be the case but that also conveyed the suggestion that the analyst should remonstrate and laud her for her excellent figure. However, as her analysis continued she did not find it necessary to exhibit in this way.

When in her analysis she started to deal with her stage career she asked the analyst if he had ever seen her perform. When she was assured he had not, she spent the greater part of 2 weeks' sessions detailing the art of performing a strip-tease act. It was at this time that she pointed out how much more she preferred night club performing to burlesque. In the night club acts, being closer to her audience than when on stage, she could watch the reactions of the audience. Her thoughts at these times were directed to how much she could excite the males in the audience and how much envy she could provoke in the females. As she detailed the elements of her act it became evident that by going through the "bumps and grinds" she was able to excite herself almost to the point of orgasm. Then, at the close of her act she would retire to her dressing room, lock herself in (under the excuse of weariness), and indulge in rather prolonged masturbation.

On a few occasions she entered into a mutual masturbatory relationship with some other female in the show, either a chorus girl or ingénue, and in two periods with a female homosexual from outside theatrical circles. In these homoerotic relationships she would be alternately active and passive. Interestingly enough, never in the course of her theatrical career did she ever have sexual relations with men while on theatrical premises.

Gradually, during analysis she became aware of the significance of her homosexual behavior in relation to a deep unconscious attempt to identify with her mother, and from this point on in her analysis she gradually drifted away from desiring homosexual relationships. She then started to substitute males as the needed objects for sexual gratification, but at first only in performing fellatio with them and allowing them to manually masturbate her or to perform cunnilinction. The fact that she would not permit any male to attempt genital penetration was abetted by her selection of generally impotent males or men who preferred by choice the perversive act rather than genital intercourse. As she became slowly aware that these men represented unconscious father-figures whom she was trying to emasculate or become superior to, it was seen that this was the defense she had adopted toward her austere and undemonstrative father of earlier years. With this realization she was cast into a rather acute anxiety-tension period for about 3 weeks.

She became aware also of why she had married the man she did. He had been 15 years her senior and was gradually rendered more and more impotent in his relations with her until she had cowed him sufficiently so that she could reject him without any struggle on his part. This represented the rejection of her father which she was able to achieve only after raising herself to a psychologically more dominant role. Because of her father's and mother's deaths when she was 15, and because she had not even then been able to work through her Oedipus conflict, she had now attempted to reject both her mother (her homosexual partners) and father (her impotent or "emasculated" men friends).

At this time, she began to be distressed by intense sexual urges which manifested themselves in a temporary return of polyuria, and she was much given to solitary masturbation in which the accompanying fantasy would be of sexual intercourse with a virile, masculine appearing man (still a number of years her senior) who would more or less forcibly ravish her. Also of interest is the fact that at this time she was extremely caustic and critical of her analyst and petulant about the fact that she seemed unable to discover any male friends who met her aspirations, either physical or mental.

In this period of her analysis she had an enlightening (to her) dream of wrestling savagely with a Negro. In the dream both she and the man were clothed, but gradually through force of strength he tore off her clothes and then divested himself. He started to penetrate her with his penis which seemed huge and black to her, and as he achieved full penetration she experienced orgasm and awoke. She was sweating, trembling, panting, and her heart was pounding. As she spoke of this dream the next day in her analytic session, she started to perspire, felt alternately hot and cold, her legs and arms were restless, and she rocked from side to side on the couch, squeezing her thighs together until she achieved orgasm. Then, highly embarrassed, she hurriedly got up from the couch and left the office without a word, although only 30 of her allotted 50 minutes had passed.

The following day on entering the office, she seemed ill at ease and rather flushed at first until she gradually started to talk about the dream. As she associated to the dream, her discomfort gradually disappeared. She was able to recall going through such physical activity when she was first introduced to masturbation by a girl in her boarding school. She recalled masturbating alone after this and fantasying being forcibly overcome and raped by various masculine figures, all of whom seemed to be older than she and whose features were never sufficiently distinct to permit identification. Having heard from school friends of the comparative largeness of the penis of Negroes she associated this with the one time she had seen the dark penis of her father. It could be seen that

she had interwoven the wish for a penis with the fear of attack and attributed to sexual intimacy an evil, sinful, or "black" connotation. Therefore, out of fear of rape, yet combined with sexual wishes, she fused the sexual wish for her father (the austere, severe man) with the denial of it by making it evil, sinful, or black (the Negro).

The patient's sexual adjustment was disturbed because of her basic competitiveness with men. She used her sexual promiscuity as a weapon with which to attack men and prove her superiority. From early and unconscious levels she viewed sexual intercourse as a violent and abusive act, and in order to satisfy her urge to dominate she selected partners who ranged from homosexuals to men of diminished or complete impotence. This was shown particularly in her short-lived marriage to an individual who was basically narcissistic and, from a certain point on, almost invariably impotent. Her obsession with fellatio at this time, and in other relationships, was directly related to her strong penis-envy wherein she would appropriate a penis for herself by means of orally incorporating it. In these instances she would struggle with the fantasy of biting it, which served to show the cannibalistic urge to destroy by incorporation, and then having it become the part of herself, something which had been denied her because she was a female.

This conflict was in turn related to her aggressiveness. It could be seen in an early phase of her analysis that her aggressiveness was rooted in the hostility she felt toward her undemonstrative father and to her casually demonstrative mother. From the earliest periods of her development she was never sure where she stood in relation to them; this insecurity was abetted by her being transferred to the ministrations of a nursemaid when she was young and later to a governess. Neither of these attendants was interested in the child in a way that would afford her some emotional appeasement. As a result, she felt intense conflict and frustration which engendered much hostility within her.

Because the family situation was one in which outbursts of feeling or other emotional releases were taboo, she was forced to conceal this hostility and, accordingly, developed a protective inhibition of aggression; hence, the form and manner in which her aggressiveness was outwardly displayed might not seem to indicate the strong unconscious undercurrent of hostility to which she was subject.

Provided as she was by the type of family manners consonant with her home and augmented by the training of an elite boarding school and junior college, it would be hard to detect any underlying viciousness in her character structure as far as the average viewer would be concerned. It became definitely and rapidly evident in the analytic situation, however, when the inhibitory protection against aggressiveness was released. At times during analysis she would rail and curse against men, masculine prerogatives, and social injustices to women, and during these complaints she would viciously "spit out" her words. At many times, particularly in the first year of analysis, the target for her tirades was the analyst, particularly when certain basic sensitive areas were broached.

It must be recalled that she had married at 19 years of age and had been divorced 7 months later. She had a small but sufficient income from her family's estate, which probably aided and abetted her entering into marriage with a man whose income was seasonal, inasmuch as he too was in the theatrical profession.

It was after her marriage that she embarked upon a stage career. Because of her lack of adequate training her hopes of becoming a dramatic actress could not be realized, and her money could not achieve such a goal. Accordingly, she was enticed into burlesque by the fact that she did have an excellent figure and a most attractive face. When she reached the age of 21, her previous monthly income from a trust fund was quadrupled. This made it possible to invite the attention of theatrical agents who promoted her career in burlesque, where she developed a singularly well-planned strip-tease act. Having funds to depend on other than the income from her act, she was able to promote her publicity to the point of national renown.

In her relations with booking agents and other theatrical personnel she could vent her hostility; this she did by means of temperamental attacks. There were very few agents she did not succeed in dominating, not through her financial strength but by pure force of aggressive browbeating. A cold and haughty manner toward men seemed to elevate her in their esteem; and when they fumblingly made overtures to her, she rapidly "cut them down to size." To a certain degree, this behavior was carried over toward women, particularly those whom she felt she had cause to dislike, such as socially prominent women and masculinely aggressive women. With chorus girls and other theatrical persons who had less to offer than she did, she was exceedingly kind and warm in her relationships.

For a long while in her analysis it was difficult for her to accept the permissiveness of the analytic situation. For more than 6 months she found it hard to accept the psychogenic basis of her physical distress. She found it particularly hard to accept the anonymity of her analyst, the fact that she could not provoke him into any defensive emotional exchange with her, and that he was impervious to all her actual charms, endowments, and accomplishments. It was a considerable time before she was able to accept her role in the analytic situation as simply that of a patient who was in psychoanalysis for help. To have to be helped by someone, particularly a man, was at first very difficult for her. Gradually as she came to see herself, how she "acted out," and how her behavior was rooted in the formative years of her life, the patient began to mellow and find that living with people could be as enjoyable as living with the new person she was becoming.

This woman had interrupted her stage career as her physical complaints intensified. During the course of her analysis, she was offered a number of remunerative engagements which she refused, but not without using them as threats to break off her treatment by the analyst during the first 6 months and at later turbulent periods until about the second year of her analysis.

At the completion of her analysis she did not return to a theatrical career but became a part-time model and resumed an active social life. She was in the process of deciding whether or not she would become a partner in an exclusive women's shop with an enterprising young woman about her own age when she met a production engineer 2 years her senior. Attracted by his intelligence, his emotional feeling for her, and a comparable social background, she gradually fell in love with him. Before deciding upon marriage, she returned to the analyst for about a month to determine the basis for and the sagacity of her choice. Three months later their marriage took place, and at the last report (2 years ago) she was the happily married suburbanite mother of a boy and a girl.

Rittenhouse Claridge, Rittenhouse Square

Diagnosis of acute INFECTIONS of the central nervous system

E. J. RENNOE, D.O.
Los Angeles, California

In this era of pencillin, sulfa, and the "mycin" drugs, infections of the central nervous system have been reduced to a fraction of their previous incidence. The decrease in mortality is especially notable. With this reduced incidence of central nervous system infections, we, as physicians, become less acutely aware of their presence except during epidemics. Since most central nervous system infections are treated in large communicable disease centers, it is not the treatment but rather the diagnosis which I shall discuss in this paper.

Poliomyelitis

Poliomyelitis, also known as acute anterior poliomyelitis, is an acute infectious and communicable disease of the central nervous system frequently resulting in paralysis. It is caused by a filtrable virus whose portal of entry into the body is the mouth or intestine. The onset of the disease is acute, although not abrupt, with headache, fever, nausea, and, occasionally, emesis following the ingestion of food. Mild tonsillitis and/or pharyngitis is noted, associated with a temperature of 99 to 101 F. At this phase there is no stiffness of the neck or back, and the illness may terminate in 24 to 36 hours. In other cases, relapse occurs, associated with a mild increase of the symptoms mentioned. Hypersensitivity becomes evident; for example, the complaint is made that stroking of the skin, as in bathing, is irritating. Hyperhidrosis, especially about the head and neck, becomes a prominent feature. With the occurrence of the above signs and symptoms, poliomyelitis must be a primary consideration, particularly during an epidemic.

It is of interest to note that approximately half the patients who develop stiffness of the neck or back eventually develop paralysis of some degree. Although muscle pain and spasm are not constant early features, a stiff neck and/or back usually develops. Kernig's sign is positive, and nuchal rigidity or definite resistance to flexion of the neck is encountered. There is inability to touch the knee to the nose in the supine position, and often in children there is a curious weakness of the sternomastoid muscles so that the head flops helplessly when the shoulders are elevated. In the sitting position, which must be gained with aid of the arms from the supine position, it is noticed that the legs must be flexed at the knee and that the patient supports his stiff back with his arms extended behind him in a tripod fashion. Before the onset of paralysis (should it occur) the tendon reflexes are variable, but afterward they are abolished in the involved limbs. As a rule, the onset of paralysis is abrupt and maximal; however, in occasional cases there may be recrudescence of the fever level, each rise being accompanied by paralysis of new groups of muscles. Strangely, after severe paralysis of the lower extremities, the patient becomes markedly constipated, and there may be retention of urine for a brief period (2 to 3 days). Paralysis may be of any degree, varying from weakness to complete flaccid paralysis, as well as of any extent, involving one or more muscles of the trunk or upper or lower extremities; thus there may be hemiplegia, paraplegia, or monoplegia in the spinal variety.

In the bulbar variety there may be paralysis of one or more cranial nerves, and the patient must be watched closely for signs of respiratory distress; observation of the vital capacity gives the best index for need of respirator placement. There may be combined spinal and bulbar involvement and less frequently encephalitic, cerebellar (ataxic), or meningitic forms.

The spinal fluid may or may not be under increased pressure, but usually there is an increase of leukocytes, the count ranging from 10 to 500 per cu. mm. Early in the disease these are of the polymorphonuclear variety, and the protein is slightly elevated. After approximately 1 week, lymphocytes predominate, and the protein may soar to 150 mg. per 100 cc. In exceptional cases there may be absence of cells associated with a mild elevation of protein. Late in the course the cell count drops, but there may be a further rise of protein preceding a very gradual reduction. The sugar and chlorides remain normal throughout the course of the disease. The blood count shows mild leukocytosis which is mainly polymorphonuclear.

Infectious or toxic neuronitis, also known as radiculoneuritis and Guillain-Barré syndrome, may be difficult to distinguish from poliomyelitis in the early stages. However, in infectious neuronitis there is usually a history of an upper respiratory infection in the preceding 2 to 6 weeks and a sudden onset of motor and sensory paralysis. There are no symptoms of acute infection, and the patient neither looks nor feels ill. Typically the cerebrospinal fluid reveals the albuminocytologic dissociation originally described by Gullain-Barré; that is, normal cell count with a total protein of 80 to 200 mg. or more per 100 cc. Paralysis is more or less symmetrical and of the lower motor neuron or flaccid variety. Typically, the patient exhibits facial diplegia, paralysis being of the peripheral type. The paralysis may extend to the brain stem, and in such cases the prognosis is almost uniformly unfavorable.

However, if the vital centers are spared, complete though gradual recovery from paralysis is the rule, residual paralysis being uncommon.

Meningitis

For the purpose of classification, meningitis may be divided into two main types. The first of these, the nonsuppurative type, is a meningeal reaction with less than 2,000 leukocytes per cu. mm. and with lymphocytes predominating. It includes meningismus and localized and serous meningitis. The second main type, the suppurative, is further divided into primary and secondary forms. The primary form is meningococcal meningitis; secondary meningitis is suppurative meningitis caused by pus-producing organisms other than the meningococcus. These include the streptococcus, staphylococcus, and pneumococcus.

Nonsuppurative Meningitis.—

Meningismus is a result of mild inflammation of the meninges early in the course of infections, such as pneumonia, influenza, otitis media, and sinusitis and upper respiratory infections, often before such primary conditions can be diagnosed. It is of brief duration, lasting usually 18 to 36 hours, and characterized by a mild rise in temperature, severe headache, moderate neck pain, stiff neck and/or back, and irritability. Lumbar puncture usually reveals marked increase in pressure, a leukocyte count of 10 to 50 per cu. mm. with either polymorphonuclear cells or lymphocytes predominating. Sugar and chloride levels are normal, and total protein is normal or slightly increased. A trace of globulin is present. There is usually symptomatic relief following lumbar puncture.

Localized meningitis follows acute paranasal sinusitis and middle ear and mastoid infections. A small area of the meninges is usually involved after passage of the infection through bone by direct extension along the blood vessels. Lumbar puncture reveals 20 to several hundred leukocytes with polymorphonuclear cells predominating. The spinal fluid sugar is normal, and there is a slight increase of globulin; however, the total protein may range up to 100 mg. per 100 cc.. Organisms are infrequently recovered. Neurologic signs, if present, are unilateral. Early recovery is the rule, but surgical measures are necessary if an abscess forms or if the process does not respond to chemotherapy.

Serous meningitis embraces lymphocytic choriomeningitis, mumps meningitis, tuberculous meningitis, and syphilitic meningitis. The cell count varies from 50 to 1,500 per cu. mm. with lymphocytes predominating. No organisms are usually found, except in the occasional case of tuberculus meningitis.

1. Lymphocytic choriomeningitis, caused by a filtrable virus, is an acute infectious disease characterized by inflammation and lymphocytic infiltration of the meninges. In the systemic type the temperature ranges from 100 to 103 F. Symptoms include malaise, general muscular aches and pains, weakness, lethargy, and upper respiratory symptoms. Recovery usually occurs in approximately 10 days.

The meningitic form, which is rarely fulminating, is characterized by severe headache, neck pain, malaise, nausea, and emesis. Although the patient does not appear to be especially ill, irrationality may occur. There is a slow pulse, nuchal rigidity, and a stiff spine. Weight loss and dehydration are common, and there is moderate to marked photophobia. Reflex alterations may be found in approximately one half of the cases. Although there is no peripheral leukocytosis, on lumbar puncture the leukocyte count varies between 50 and 1,500 with 80 to 95 per cent lymphocytes. The spinal fluid pressure may be normal or moderately increased. The spinal fluid sugar ranges from normal to slightly below normal, chloride is normal, and the total protein may be increased. General clinical improvement occurs within a few days with recovery usually within 2 weeks.

The differential diagnosis of lymphocytic choriomeningitis from tuberculous meningitis may be difficult but, in the latter, a history of exposure to tuberculosis or x-ray evidence of infection suggests the diagnosis. In poliomyelitis cerebrospinal fluid examination reveals the predominant cell is at first polymorphonuclear, later lymphocytes predominate; sugar and chlorides are normal, and the total protein usually varies from 25 to 150 mg. per 100 cc. However, the clinical findings and course of the process must be considered for the differential diagnosis.

In mumps meningitis the spinal fluid findings are also similar to those of lymphocytic choriomeningitis, but the history of exposure, salivary gland involvement, and elevated serum diastase serve to establish diagnosis. Differentiation must also be made from postinfectious encephalitis but, in the latter, the onset of symptoms occurs usually 4 to 12 days after an illness such as measles, chicken pox, or German measles. Likewise, the spinal fluid findings in herpes zoster simulate those of lymphocytic choriomeningitis, but the appearance of the herpetiform lesions clinches the diagnosis.

2. Mumps meningitis is caused by a filtrable virus. Central nervous system involvement, when it occurs, comes on at the eighth to tenth day and is associated with an elevated temperature and meningeal signs. On lumbar puncture a milky fluid under moderate to greatly increased pressure is recovered. The leukocyte count ranges from 300 to 1,000 per cc. mm.; usually over 85 per cent are lymphocytic.

3. Fortunately the tubercular and syphilitic forms are relatively rare. In syphilitic meningitis a positive serologic test and a first, middle, or third zone colloidal gold curve establish the diagnosis. In both tuberculous and syphilitic meningitis the spinal fluid cell count ranges between 10 and 1,500. Early in tuberculous meningitis polymorphonuclear cells may be found, whereas later lymphocytes predominate. The total protein is increased, and organisms may be recovered on smear and later through cultures. Spinal fluid sugar and chlorides are both reduced. In confusing cases, the tryptophan test may be of diagnostic value.

Suppurative Meningitis.—

Meningococcal meningitis, also known as primary meningitis, cerebrospinal fever, spotted fever, and epidemic cerebrospinal meningitis, is an inflammation of the meninges due to meningococcus, a gram-negative diplococcus. Three phases are described: local or nasopharyngeal, septicemic or invasive, and meningeal.

The local or nasopharyngeal phase is of little consequence since very few cases are recognized in this stage.

The septicemic or invasive phase is characterized by a temperature of 99 to 103 F. which is of the "picket fence" variety typical of septicemia. The patient appears dull, apathetic, and indifferent and does not want to be disturbed. After several days he usually lies on his side with the knees drawn up and the head and spine extended. Symptoms include muscular aches or general body pain and a sense of chilliness, or frank chills; delirium or coma may occur. Petechiae are

usually present, most frequently on the chest, abdomen, and/or extremities. These lesions are due to damage to the capillaries by toxins and are reddish blue, tending to become darker. They are not of uniform size and may undergo gangrenous changes.

In the meningeal phase which follows in approximately 48 hours, there is a fairly acute onset of headache, vomiting, fever, chills, backache, and stiff neck. The headache is severe and throbbing, and the temperature usually ranges from 100 to 103 F., or even to 105 F. Irrationality and delirium may also develop. Convulsions often introduce this phase in children. The superficial as well as the deep tendon reflexes are abolished, and Brudzinski's and Kernig's signs are positive. A positive Babinski toe sign may occasionally be obtained. The fontanel is depressed in infants who have been vomiting and are dehydrated. The pupils are dilated, and strabismus may be encountered. The temperature is erratic and the respiration is often irregular. The blood leukocyte count is between 10,000 and 30,000 per cu. mm., with 80 to 90 per cent polymorphonuclear; blood cultures yield the meningococcus. The spinal fluid is hazy to cloudy, under increased pressure, and contains from 2,000 to 15,000 cells which are predominately polymorphonuclear. The total protein ranges from 50 to 500 mg. per 100 cc., and the globulin is increased. The sugar is reduced and rapidly falls to zero; chlorides are also reduced to 600 to 650 mg. per 100 cc. In smears of cerebrospinal fluid the meningococcus may be found both intracellularly and extracellularly. Several complications may result from suppurative meningitis. Spinal fluid block may occur, although it is no longer encountered with frequency. Involvement of the cranial nerves may produce, for example, strabismus, blindness, and deafness due to basilar adhesions. Subdural effusion occurs rather commonly in children under the age of 2 years but should also be suspected in older ones with serious neurologic deficits or when the inflammatory process has not resolved completely and promptly.

Secondary or suppurative meningitis, caused by pus-producing organisms other than the meningococcus, results from a primary infection in some other part of the body, such as the nose, pharynx, sinuses, ears, lungs, and joints. The most common organisms involved are the influenza (Pfeiffer) bacillus, pneumococcus, staphylococcus, and streptococcus. The signs and symptoms are similar to those of meningococcic meningitis except that no petechiae develop, and therefore the diagnosis rests with recovery of the offending organism from blood cultures and/or smears and cultures of the spinal fluid. The spinal fluid leukocyte

TABLE I—SPINAL FLUID FINDINGS

Diagnosis	Number of cells per cu. mm.	Predominant cells	Sugar (mg. per 100 cc.)	Protein (mg. per 100 cc.)	Organisms
Normal	0-5	Lymphocyte	50-80	15-45	None
Poliomyelitis	10-500	PMN early, then lymphocyte	50-90	25-150	None
Meningismus	10-50	PMN or lymphocyte	50-80	15-45	None
Localized meningitis	20-500	PMN	50-80	15-100	None
Lymphocytic choriomeningitis	50-1,500	Lymphocyte	50-80	15-200	Virus
Syphilitic meningitis	10-1,500	Lymphocyte	20-60	50-500	None
Tuberculous meningitis	10-1,500	PMN early, then lymphocyte	10-60	50-200	Present
Mumps meningitis	300-1,000	Lymphocyte	50-80	50-200	None
Meningococcal meningitis	2,000-15,000	PMN	0-40	50-500	Present
Secondary (suppurative) meningitis	2,000-70,000	PMN	10-60	50-500	Present
Encephalitis: toxic, postinfectious, and postvaccinal	15-500	Lymphocyte	60-100	15-75	None
Encephalitis: St. Louis and von Economo	50-500	Lymphocyte	80-150	15-75	None

count varies greatly, depending on the type of infection, ranging from 2,000 to 70,000 with polymorphonuclear cells predominating. Here again subdural effusion may occur, especially in the influenzal type.

Infectious encephalitis

Infectious encephalitis may be classified as toxic, postvaccinal and postinfectious, and epidemic.

Toxic Encephalitis.—

The toxic form occurs early in the course of acute infectious diseases as the result of toxemia and usually affects infants and small children. Characteristically it is of short duration and presents a high fever, exaggerated tendon reflexes, hyperirritability or somnolence, nuchal rigidity, and, occasionally, irrationality. Cranial nerve palsies may be encountered in the exceptional case.

The spinal fluid is found to be under moderately increased pressure and contains 15 to 100 leukocytes, predominately lymphocytes, per cu. mm. There is an increase of globulin and normal sugar. Relief of the neurologic symptoms occurs following lumbar puncture, and the true clinical picture shortly becomes obvious.

Postinfectious and Postvaccinal Encephalitis.—

Postinfectious encephalitis occurs from 1 to 2 weeks or more following the onset of such communicable diseases as measles, scarlet fever, mumps, chickenpox, whooping cough, and typhoid fever. The postvaccinal form occurs following vaccination for smallpox, yellow fever, or pertussis.

Usually in these cases there is an abrupt rise in temperature, exaggerated reflexes, irritability or somnolence, slight rigidity of the neck and back, and hypersensitivity. Kernig's sign is positive, and convulsions may occur, as well as delirium and coma. The spinal fluid is under moderately increased pressure, the leukocyte count ranges between 50 and 500 per cu. mm., lymphocytes predominating. The total protein is between 15 and 75 mg. per 100 cc. and sugar levels are slightly above normal. Personality changes, infrequent blinking, a blank expression or vacant stare, deafness, or blindness may be sequelae.

Epidemic Encephalitis.—

In the epidemic encephalitis group, two main forms will be considered: von Economo's encephalitis and St. Louis encephalitis.

Von Economo's encephalitis is characterized by an insidious onset and influenzalike symptoms. There is moderate stiffness of the neck and/or back, temperature is 100 to 102 F., and there usually are headache and general vague body aches.

At this point, one of two clinical courses may be expected. In the first of these, the lethargic type, the patient sleeps throughout the normal waking hours and is aroused with difficulty. Inequality of the pupils, ptosis, and strabismus may be noticed. Soon generalized rigidity, coarse tremors, and shifting spastic paralysis appear. The duration of the illness is variable; it may last for several weeks to several months.

In the second or hyperkinetic type, the temperature is higher and the patient is more excitable. Choreiform and athetotic movements make their appearance, and skeletal muscle rigidity is noted. Blood changes are not appreciable in the acute phase. In both varieties the spinal fluid is under a moderate increase of pressure; globulin is present, the cell count ranges from 50 to 500 per cu. mm., and the sugar level is from 80 to 150 mg. per 100 cc. Mental dulling and the Parkinson's syndrome occur frequently as sequelae; some patients remain chronic invalids, and in some a frank psychosis may develop.

St. Louis encephalitis is characterized by an acute onset, temperature of 102 to 105 F., nausea and emesis, headache, dizziness, and nuchal rigidity; in some cases there is lethargy, dysarthria, confusion, and intention tremors, while in others there is irritability or irrationality. Paralysis, if present, is of the spastic variety, and deep tendon reflexes are exaggerated. Signs of clinical improvement are usually noticed in approximately 10 days, and the fever abates. Spinal fluid examination reveals increased pressure; the leukocyte count is between 50 and 500 with lymphocytes predominant; globulin is present, and sugar is normal or increased. Bacteria are not present.

Spinal fluid findings

In conclusion, since the differential diagnosis of infections of the central nervous system often depends upon spinal fluid findings, these findings are summarized in Table I.

1100 N. Mission Road

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Teamwork

Courtesy in keeping physicians outside the hospital informed about their patients is vital to the proper care of patients and in keeping good will. The inevitable delays in communication can be reduced by efficient attention to the details of good staff work.

Patient-physician relations can be and may be complicated by having students around. But care and thoughtfulness reduce or avoid such complications. The danger of rounds to the patient has only recently become the theme of careful study. The greater the formality, the longer the retinue, the better for the professor's ego and the worse for the average patient. Bedside teaching should be restricted to history taking, examination, and demonstration. The discussion, which may become an *in vivo* autopsy, should be done out of the sight and hearing of the patient—at least until experience and maturity develop the proper respect for the patient in all members of the group.—William B. Bean, M.D., *Journal of the Student American Medical Association*, June 1956.

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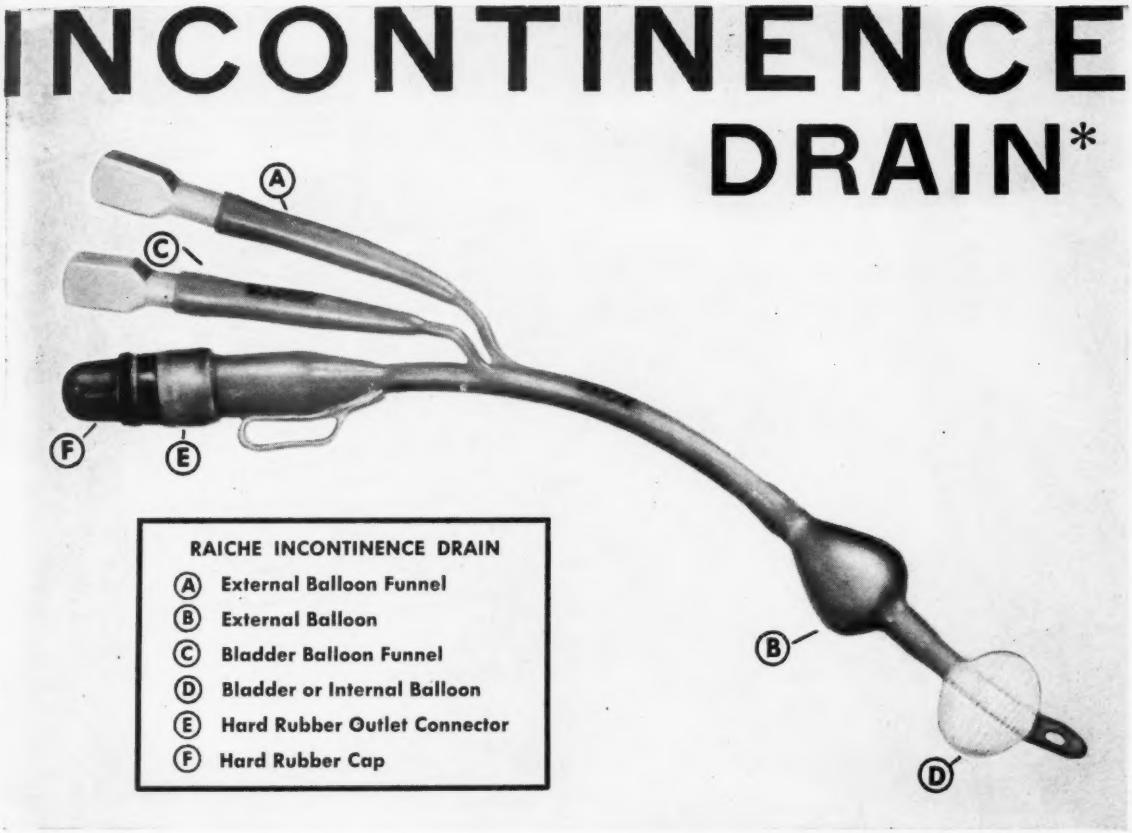

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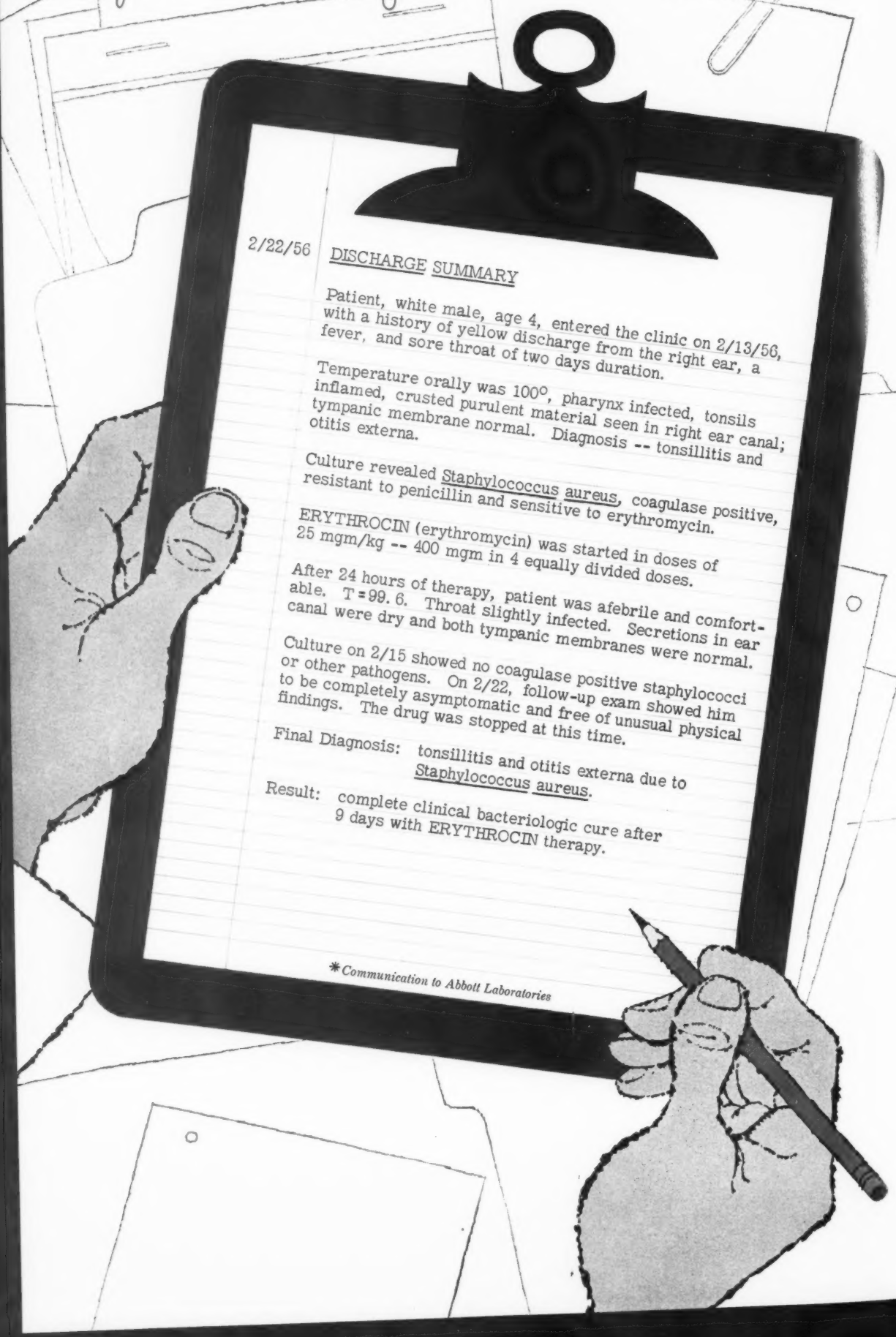
Erythrocin in treating tonsillitis and otitis externa*



2/22/56 DISCHARGE SUMMARY

Patient, white male, age 4, entered the clinic on 2/13/56, with a history of yellow discharge from the right ear, a fever, and sore throat of two days duration.

Temperature orally was 100°, pharynx infected, tonsils inflamed, crusted purulent material seen in right ear canal; tympanic membrane normal. Diagnosis -- tonsillitis and otitis externa.

Culture revealed Staphylococcus aureus, coagulase positive, resistant to penicillin and sensitive to erythromycin.

ERYTHROCIN (erythromycin) was started in doses of 25 mgm/kg -- 400 mgm in 4 equally divided doses.

After 24 hours of therapy, patient was afebrile and comfortable. T = 99.6. Throat slightly infected. Secretions in ear canal were dry and both tympanic membranes were normal.

Culture on 2/15 showed no coagulase positive staphylococci or other pathogens. On 2/22, follow-up exam showed him to be completely asymptomatic and free of unusual physical findings. The drug was stopped at this time.

Final Diagnosis: tonsillitis and otitis externa due to Staphylococcus aureus.

Result: complete clinical bacteriologic cure after 9 days with ERYTHROCIN therapy.

*Communication to Abbott Laboratories

"clinical response good or excellent"

In one recent study, 18 patients with acute follicular tonsillitis and septic sore throat, were given erythromycin. Infecting organism was *Str. pyogenes*. The investigator stated, *"In all 18, the clinical response could be regarded as either good or excellent."*[1]

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Idem p. 30.

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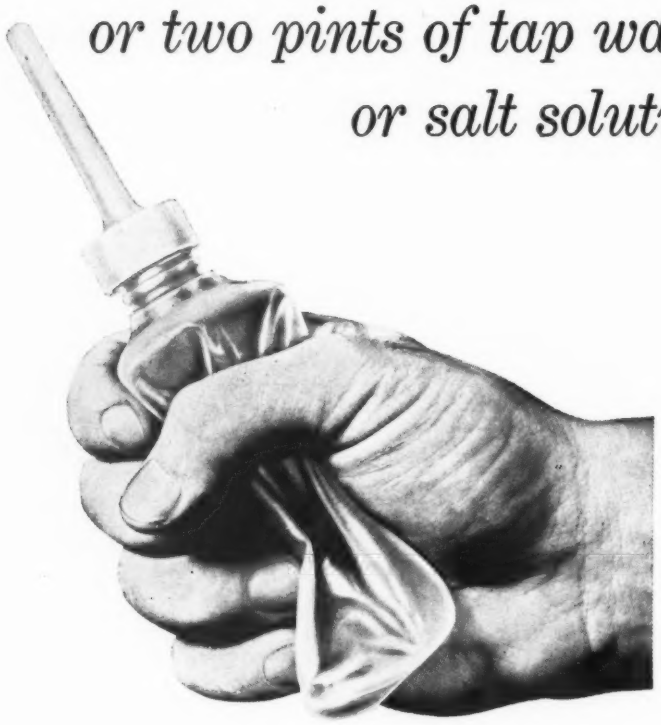

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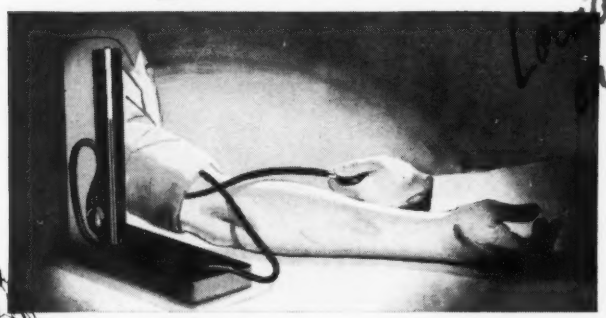

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Significant:

Wilkins, R. W.: Mississippi Doctor 30:359, 1953

Wilkins, R. W., and Judson, W. E.: New England Jrl. of Medicine 248:48, 1953

Duncan, Garfield G.: Philadelphia Medicine 51:24, 1956

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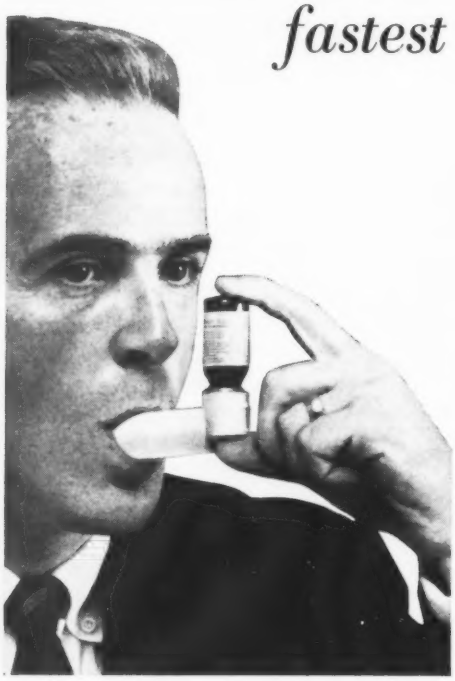

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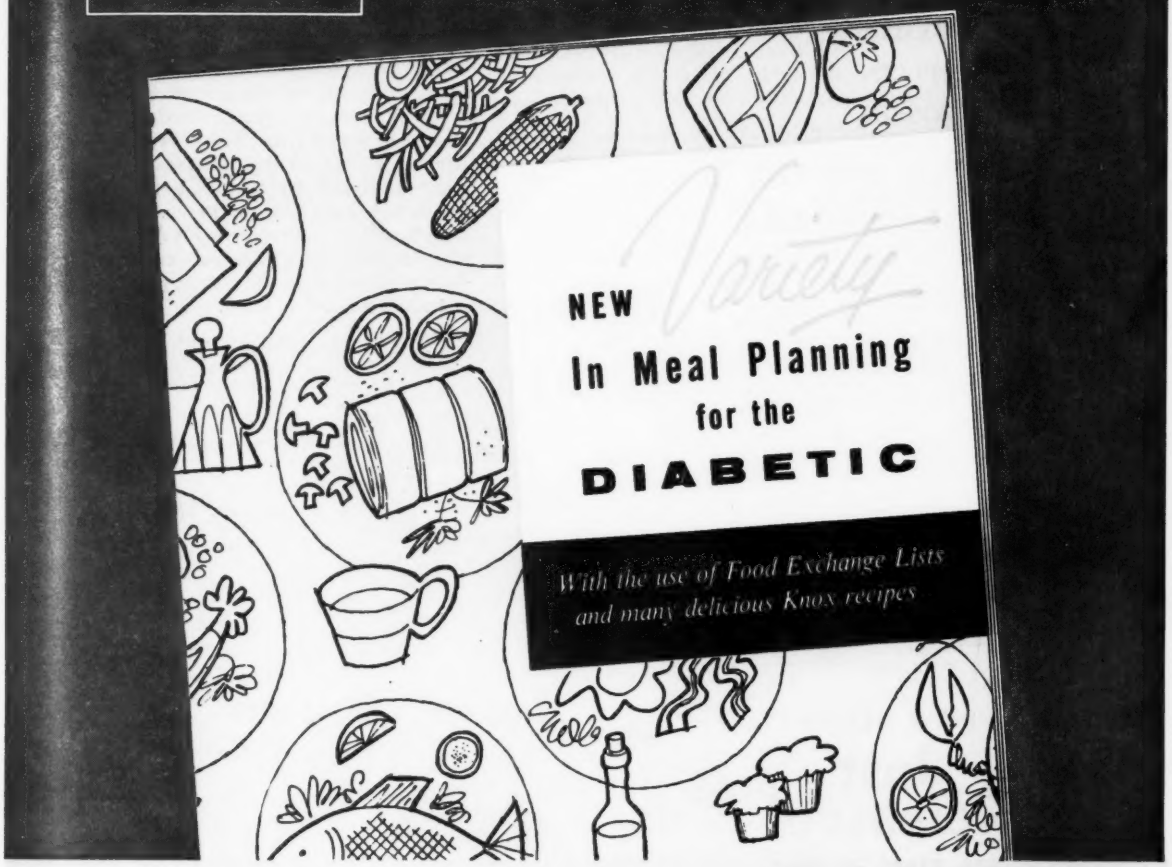

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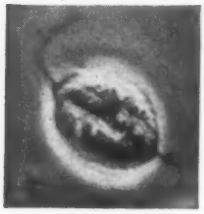
EXPLODES

HIDDEN TRICHOMONADS



Too often treatment fails to cure vaginal trichomoniasis because parasites survive and set up new foci of infection.

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References: 1. Davis, C. H., and Grand, C. G.: Am. J. Obst. & Gynec. 68:559 (Aug.) 1954. 2. Davis, C. H.: West. J. Surg. 63:53, (Feb.) 1955. 3. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955.

†Pat. App. for.

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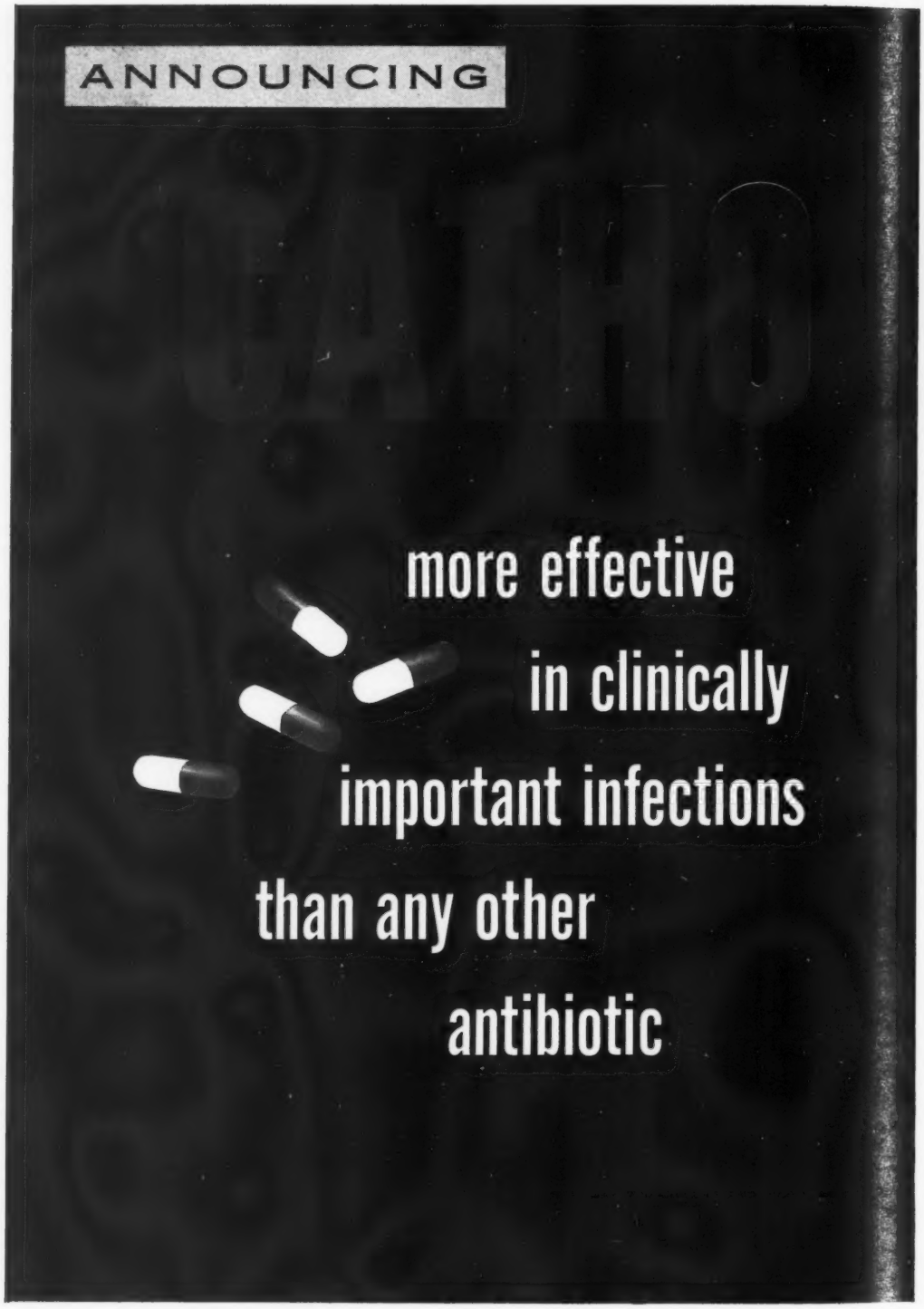
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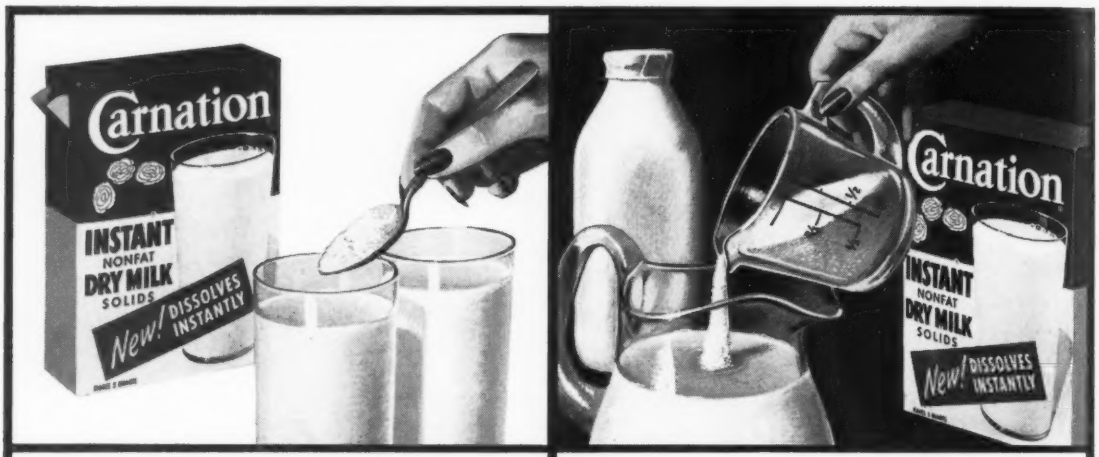

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By PHILIP MOEN STIMSON, A.B., M.D.
Professor of Clinical Pediatrics, Cornell University Medical College, New York City

and HORACE LOUIS HODES, A.B., M.D.
Clinical Professor of Pediatrics, College of Physicians and Surgeons Columbia University, New York City

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The many highly recommended features that establish this compact manual as one of the finest contributions to the field of communicable diseases center around its clear guidance on diagnosis and differential diagnosis, special isolation technics, length of contagion period and detailed treatment. Stripped of all non-essentials, this popular text has long been noted for its clarity, readability, authenticity and integrity. The well-organized data make it a clinical guide of unusual value for practitioners, specialists in children's diseases, school and industrial physicians, interns, medical students and nurses.

A highlight of this edition is the new editorial association with Dr. Stimson, of Dr. Horace L. Hodes, whose wide experience in this field augments that of the senior author. This broader approach to communicable diseases includes added emphasis on treatment, the many advances in bacteriology and virology, a new chapter on antibiotics and a rewritten and virtually new chapter on poliomyelitis. Many other subjects have had extensive revision and a table on vaccines and two on antibiotics have been added to the many that supplement numerous illustrations and charts.

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Conventions and meetings

Announcements

American Osteopathic Association, Sixty-First Annual Convention, Hotels Adolphus, Baker, and Statler, Dallas, Texas, July 15-19. Program Chairman, Neil R. Kitchen, 18820 Woodward Ave., Detroit.

American College of Osteopathic Obstetricians and Gynecologists, annual meeting, Bellevue-Stratford Hotel, Philadelphia, February 18-20. Program Chairman, P. J. MacGregor, Jr., 706 J. M. S. Bldg., South Bend 1, Ind. Secretary, Harold K. Morgan, Lakewood Polyclinic, 7575 W. 14th Ave., Denver 15.

American Osteopathic Society of Proctology, annual meeting, Hotel Statler, Detroit, April 3-5. Program Chairman, John A. Brandon, 1814 Oberlin Ave., Lorain, Ohio. Secretary, Carl S. Stillman, Jr., 3523 Fifth Ave., San Diego 3, Calif.

Arizona, annual meeting, Wigwam Hotel, Litchfield Park, April 25-28. Program Chairman, R. D. Bennett, 115 W. First St., Mesa. Secretary, Homer E. Allhouse, 2243 N. 12th St., Phoenix 22.

California, annual meeting, Hotel del Coronado, Coronado, May 15-19. Executive Secretary, Mr. Thomas C. Schumacher, 1298 Wilshire Blvd., Los Angeles 17.

Colorado, Rocky Mountain Conference, Broadmoor Hotel, Colorado Springs, November 16-18. Program Chairman, A. E. Nichols, 1001 Joliet St., Aurora 8. Secretary, C. Robert Starks, 1459 Ogden St., Denver 18.

Georgia, annual meeting, King and Prince Hotel, St. Simons, May 9-11. Program Chairman, Walter B. Elliott, Jr., 702 Mortgage Guarantee Bldg., Atlanta 3. Secretary, Ruth McNeff Glass, 1432 Donnelly Ave., S.W., Atlanta 10.

Illinois, annual meeting, Palmer House, Chicago, April 26-28. Program Chairman, S. V. Robuck, 25 E. Washington St., Chicago 2. Executive Secretary, Mr. D. O. Durkin, Rm. 521, 53 W. Jackson Blvd., Chicago 4.

Indiana, annual meeting, Marott Hotel, Indianapolis, May 19-21. Program Cochairmen, Paul van B. Allen, 1500 N. Delaware St., Indianapolis 2, and H. E. Rinne, 519-20 Merchants Bank Bldg., Indianapolis 4. Secretary, Arabelle B. Wolf, 4840 N. Michigan Rd., Indianapolis 8.

Iowa, annual meeting, Savory Hotel, Des Moines, May 27-28. Program Chairman, R. S. Farran, Badgerow Bldg., Sioux City 9. Secretary, Mr. Herman W. Walter, 200 Walnut Bldg., Des Moines 9.

Kansas, annual meeting, Town House, Kansas City, May 4-8. Program Chairman, V. R. Cade, Cade Clinic Bldg., 816-18 Broadway, Larned. Secretary, Mr. Lloyd L. Hall, 121 E. 8th St., Topeka.

Maine, midyear meeting, Elmwood Hotel, Waterville, December 7-8. Annual meeting, Samoset Hotel, Rockland, June 27-29. Professional Education Chairman, Donald P. Miller, Main St., Norridgewock. Secretary, Roswell P. Bates, 72 Main St., Orono.

Massachusetts, annual meeting, Somerset Hotel, Boston, January 19-20. Program Chairman, William A. Seeglitz, 315 Franklin St., Newton 58. Secretary, Mrs. Gladys M. Stockdale, 524 California St., Newtonville 60.

Michigan, annual meeting, Grand Rapids, September 30-October 2. Program Chairman, Harold W. Laidlaw, McCoy-Laidlaw Clinic, Bad Axe. Secretary, P. Ralph Morehouse, 214 S. Superior St., Albion.

Minnesota, annual meeting, Lowry Hotel, St. Paul, May 2-4. Program Chairman, M. Sidney Hedeen, 1595 Selby Ave., St. Paul 4. Secretary, E. R. Komarek, 301 Granite Exchange Bldg., St. Cloud.

New Jersey, annual meeting, Ritz-Carlton Hotel, Atlantic City, March 2-3. Program Chairman, Kirk L. Hilliard, 850 N. Main St., Pleasantville. Secretary, Richard F. Leedy, 38 Newton

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New Mexico, annual meeting, Navajo Lodge, Ruidoso, May 16-18. Program Chairman, Lory Baker, 400 N. Church St., Las Cruces. Secretary, Robert E. Smith, 205 N. First, Lovington.

Northwest Osteopathic Convention, Multnomah Hotel, Portland, Oregon, June 17-20. Program Chairman, Russell F. Kenaga, 2265 W. Burnside St., Portland 5, Ore.

Ohio, annual meeting, Neil House Hotel, Columbus, May 5-8. Program Chairman, Donald Siehl, 701 Salem Ave., Dayton 6. Secretary, Mr. William S. Konold, 53 W. Third Ave., Columbus.

Ontario, annual meeting, Orillia, May 2-4. Program Chairman, C. V. Hinsperger, 806 Canada Bldg., Windsor. Secretary, A. V. DeJardine, 205 Yonge St., Toronto 1.

Oregon: See Northwest Osteopathic Convention.

Rocky Mountain Conference: See Colorado.

South Dakota, annual meeting, Huron, June 2-3. Program Chairman, F. A. Nutter, Jr., Box 368, Beresford. Secretary, Earl W. Hewlett, 417 W. 27th St., Sioux Falls.

Tennessee, annual meeting, Graystone Hotel, Gatlinburg, April 28-May 1. Program Chairman, L. D. Elliston, 707 S. Main St., Covington. Secretary, J. M. Moore, Jr., 200 High St., Trenton.

Texas, annual meeting, Plaza Hotel, San Antonio, May 2-4. Program Chairman, Myron S. Magen, 5101 Ross Ave., Dallas 6. Secretary, Phil R. Russell, 512 Bailey St., Ft. Worth 7.

Washington: See Northwest Osteopathic Convention.

West Virginia, annual meeting, Daniel Boone Hotel, Charleston, June 2-4. Program Chairman, Frank E. Pick, 4410 McCorkle Ave., S.W., South Charleston 3. Secretary, Guy E. Morris, 542 Empire Bank Bldg., Clarksburg.

Wisconsin, annual meeting, Wisconsin Hotel, Milwaukee, April 29-May 1. Program Chairman, I. J. Ansfield, 1500 E. Brady St., Milwaukee 2. Secretary, Edwin J. Elton, 1518 N. 70th St., Wauwatosa 13.

State and national boards

ARIZONA

Those interested in professional examinations should contact Russell Peterson, D.O., secretary, Osteopathic Board of Registration and Examination in Medicine and Surgery, 2747 East McDowell Road, Phoenix.

Basic science examinations December 18 at the University of Arizona, Tucson. Applications must be filed 2 weeks prior to examination. Address H. D. Rhodes, Ph.D., secretary, Basic Science Board, University of Arizona, Tucson.

COLORADO

Basic science examinations December 5-6. Applications must be filed by November 21. Address Esther B. Starks, D.O., secretary, Basic Science Board, 1459 Ogden St., Denver 18.

CONNECTICUT

Basic science examinations February 9. Address State Board of Healing Arts, 52 Whitney Ave., New Haven 10.

DELAWARE

Examinations January 8-10. Address Joseph S. McDaniel, M.D., secretary, Board of Medical Examiners, 229 S. State St., Dover.

ILLINOIS

Examinations in January in Chicago. Address Mr. Frederic B. Selcke, Superintendent of Registration, Department of Registration and Education, State House, Springfield.

IOWA

Basic science examinations January 8 at the Capitol Bldg., Des Moines. Address Ben H. Peterson, Ph.D., secretary, Board of Basic Science Examiners, Coe College, Cedar Rapids.

KANSAS

Examinations February 14-15 at the Jayhawk Hotel, Topeka. Address C. A. Welker, D.O., secretary, Board of Osteo-

pathic Examination and Registration, J. C. Penney Bldg., Concordia.

MASSACHUSETTS

Examinations January 15-18 at State House, Boston. Applications must be filed by January 2. Address Robert C. Cochrane, M.D., secretary, Board of Registration in Medicine, Room 37, State House, Boston 33.

MICHIGAN

I. L. O'Connor, Detroit, has been appointed to the Board of Osteopathic Registration and Examination for a term expiring April 30, 1961.

Basic science examinations in January. Address Mrs. Anne Baker, secretary, Board of Examiners in the Basic Sciences, 116 Mason Building, Lansing.

MINNESOTA

Basic science examinations in January. Applications must be filed by December 10. Address Raymond N. Bieter, M.D., secretary, Board of Examiners in the Basic Sciences, 105 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA

Basic science examinations January 8-9. Address Mr. Husted K. Watson, Director, Bureau of Examining Boards, Department of Health, State Capitol Bldg., Lincoln 9.

NEVADA

Professional examinations January 26. Applications must be filed by January 12. Address Walter J. Walker, D.O., secretary, Board of Osteopathic Examiners, 210 W. Second St., Reno.

Basic science examinations January 8. Address Donald G. Cooney, Ph.D., secretary, Board of Examiners in the Basic Sciences, Box 9005, University Station, Reno.

NEW MEXICO

Basic science examinations January 20. Address Mrs. Marguerite Cantrell, secretary, Board of Examiners in the Basic Sciences, P.O. Box 1522, Santa Fe.

NORTH DAKOTA

Examinations in January. Address G. L. Hamilton, D.O., secretary, Board of Osteopathic Examiners, Ringo Bldg., 119 S. Main St., Minot.

E. O. Smith, Wahpeton, has been appointed to the State Board of Osteopathic Examiners for a three-year term.

OHIO

Examinations December 18-20 at Columbus. Applications should be filed 10 days before examination. Address H. M. Platter, M.D., secretary, Medical Board, 21 W. Broad St., Columbus 15.

OREGON

Basic science examinations December 1. Address Oregon Basic Science Examining Committee, State Board of Higher Education, Eugene, Oregon.

Professional examinations in January. Address Mr. Howard I. Bobbitt, 609 Failing Building, Portland.

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1. Oil Paint and Drug Reporter, April 30, 1956.

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RHODE ISLAND

Professional examinations January 3-4. Address Mr. Thomas B. Casey, Administrator of Professional Regulation, 366 State Office Bldg., Providence.

Basic science examinations in February. Address Mr. Casey.

SOUTH DAKOTA

Professional examinations January 15-16 at Sioux Falls. Address Mr. John C. Foster, executive secretary, Board of Medical and Osteopathic Examiners, Room 300, First National Bank Bldg., Sioux Falls.

Basic science examinations December 7-8 at the Medicine and Science Building, University of South Dakota, Vermillion. Applications must be filed by November 23. Address Gregg M. Evans, Ph.D., secretary, Basic Science Board, 310 E. 15th St., Yankton.

TENNESSEE

Examinations in February and July at Nashville. Applications must be filed 15 days prior to examination. Address M. E. McCoy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland, Jackson.

TEXAS

Examinations December 6-8 at the Hilton Hotel, Fort Worth. Applications for license by reciprocity must be filed at least 30 days prior to the meeting, and applications for examination must be on file 10 days prior to the meeting. Address M. H. Crabb, M.D., secretary,

Board of Medical Examiners, 1714 Medical Arts Bldg., Fort Worth 2.

VERMONT

Examinations January 23-24, State House, Montpelier. Applications must be filed by January 10. Address Charles D. Beale, D.O., secretary, Board of Osteopathic Examination and Registration, Mead Bldg., Rutland.

WASHINGTON

Professional examinations January 14-16, University of Washington, Seattle. Applications must be filed 15 days prior to examination. Address Professional Division, State of Washington Department of Licenses, Olympia.

Basic science examinations January 9-10, University of Washington, Seattle. Applications must be filed 15 days prior to examination date. Address Professional Division, Washington State Department of Licenses, Olympia.

WISCONSIN

Examinations January 8 at Madison. Address Thomas W. Tormey, Jr., M.D., secretary, Board of Medical Examiners, State Office Bldg., 1 West Wilson St., Madison.

Basic science examinations December 1 at the Hotel Schroeder, Milwaukee. Applications must be filed by November 23. Address Mr. W. H. Barber, secretary, Board of Examiners in the Basic Sciences, Ripon College, Ripon.

WYOMING

Examinations February 4. Address Franklin D. Yoder, M.D., New State Office Bldg., Cheyenne.

Reregistration of osteopathic licenses

December 1—District of Columbia, $2.00. Address Mr. Paul Foley, Deputy Director, Department of Occupations and Professions, 1740 Massachusetts Ave., N.W., Washington 6.

December 1—Georgia, $3.00. If renewed after December 31, the fee is $10.00. For information address Harry E. Huff, D.O., acting secretary, Board of Osteopathic Examiners, Tifton.

December 1—Oregon, resident, $15.00; nonresident inactive, $5.00. Address Mr. Howard I. Bobbitt, executive secretary, Board of Medical Examiners, 609 Failing Bldg., Portland 4.

December 31—Tennessee, $5.00. Address M. E. Coy, D.O., secretary, Board of Examination and Registration for Osteopathic Physicians, 1226 Highland, Jackson.

Prior to January 1—Arizona, not more than $10.00. Address Russell Peterson, D.O., secretary, Osteopathic Board of Registration and Examination in Medicine and Surgery, 2747 E. McDowell Rd., Phoenix 22.

January 1—California, $20.00 for residents and nonresidents. Address Glen D. Cayler, D.O., secretary, Board of Osteopathic Examiners, 1013 Forum Bldg., Sacramento 14.

January 1—Florida, $5.00. Address W. S. Horn, D.O., secretary, Board of Osteopathic Medical Examiners, 1500 Eighth Ave., Palmetto.

January 1—Maine, $4.00. Address George F. Noel, D.O., secretary, Board of Osteopathic Examination and Registration, Monument Square, Dover-Foxcroft.

January 1—Manitoba, $5.00. Address W. Kurth, D.O., secretary, Board of Osteopathic Physicians, 248 Moorgate Blvd., Deer Lodge, Winnipeg.

January 1—New York, $5.00, biennially. A physician receiving a license the second year of any biennial registration period pays a fee of $2.50 for a certificate expiring December 31 of such second year. Address Stiles D. Ezell, M.D., secretary, Bureau of Professional Examinations and Registrations, 23 S. Pearl St., Albany 7.

January 1—Ontario, $35.00. Address D. Gordon Campbell, D.O., secretary, Board of Directors of Osteopathy, 2 Bloor St., E., Toronto 5.

January 1—Pennsylvania, Surgeons Examining Board, $10.00. Address Mrs. Katherine M. Wollet, acting secretary, Board of Osteopathic Examiners, Bureau

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Trafton and Lind[3] found tetracycline (ACHROMYCIN) an effective antibiotic for treating many urinary tract infections caused by both Gram-negative and Gram-positive organisms.

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References:
1. Finland, M., *et al.*: *J.A.M.A.* 154:561 (Feb. 13) 1954.
2. Prigot, A. and Marmell, M. *Antibiotics and Chemotherapy* 4:1117 (Oct.) 1954.
3. Trafton, H. and Lind, H.: *idem* 4:697 (June) 1954.
4. English, A., *et al.*: *idem* 4:441 (April) 1954.

Examination by National Board

The National Board of Examiners for Osteopathic Physicians and Surgeons conducts Parts I and II of its examination on the first Thursday and Friday of each May and December at the six approved colleges. Application blanks may be obtained from the secretary or the dean of the college, and the completed application blank, together with a passport photograph and check for the parts to be taken, must be in the secretary's office by the November 1 or April 1 preceding the examination.

Examinations in Part I consist of anatomy, including histology and embryology; physiology; physiological chemistry; general pathology; and bacteriology, including parasitology and immunology.

Part II consists of examinations in surgery, including applied anatomy, surgical pathology, and surgical specialties; obstetrics and gynecology; pediatrics, neurology and psychiatry; public health, including hygiene, medical jurisprudence; osteopathic principles, therapeutics, including pharmacology and materia medica.

Part III is an oral and practical examination given under the supervision of a chief examiner who is a member of the Board and by a panel of associate examiners. Subjects covered in Part III are anatomy; physiology; pathology; osteopathic principles; therapeutics, and pharmacology; surgery; ophthalmology and otorhinolaryngology; obstetrics and gynecology; physical and clinical diagnosis; public health and communicable diseases.

Part III examinations will be given at Philadelphia, March 2-3, at Kirksville, Mo., March 10, and at Los Angeles, March 16-17. Applications must have been filed with the secretary of the Board by January 1.

These are oral examinations which the candidate may take after having satisfactorily completed the first 6 months of a 1 year internship in a hospital approved by the American Osteopathic Association for intern training. Part III is given annually at the Philadelphia, Kirksville, and Los Angeles colleges.

Eligibility requirements are as follows: Part I, satisfactory completion of the first 2 years in an approved school of osteopathy; Part II, satisfactory completion of Part I and of the first two quarters or trimesters of the senior year in an approved osteopathic college; Part III, satisfactory completion of Part II and at least 6 months of a 1-year internship approved by the American Osteopathic Association. The internship requirement does not apply to candidates who took Part I prior to July, 1950.

Applications must be filed with the secretary of the Board not less than 30 days prior to the examination dates. Address Paul van B. Allen, D.O., secretary, 1512 N. Delaware Street, Indianapolis 2, Indiana.

of Professional Licensing, Harrisburg.

January 1—Texas, $5.00. Address M. H. Crabb, M.D., secretary, Board of Medical Examiners, 1714 Medical Arts Bldg., Fort Worth 2.

January 1—Utah, $3.00. Address Alice E. Houghton, D.O., secretary, Osteopathic Examining Board, 600 Zion's Savings Bank Bldg., Salt Lake City 1.

January—Alberta. No reregistration. Pay $10.00 a year membership in the College of Physicians and Surgeons, Alberta, in January.

During January—Connecticut, $2.00. Address Frank Poglitsch, D.O., secretary, Osteopathic Examining Board, 300 Main St., New Britain.

During January—Minnesota, $2.00. Address Wallace F. Kreighbaum, D.O., secretary, Board of Osteopathic Examiners, 2748 Hennepin Ave., Minneapolis 8.

During January—Wisconsin, $3.00. Address Thomas W. Tormey, Jr., M.D., secretary, Board of Medical Examiners, State Office Bldg., 1 W. Wilson St., Madison.

January 31—British Columbia, amount of fee set at Annual Meeting of Council of College of Physicians and Surgeons of British Columbia. Address Lynn Gunn, M.D., 1807 W. 10th Ave., Vancouver 9.

Prior to February 1—Vermont, $3.00 residents, $2.00 non-residents. Address Charles D. Beale, D.O., Meade Bldg., Rutland.

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Search for mental health*

George S. Stevenson, M.D.
National and International Consultant
The National Association for Mental Health

What is mental health? Julius Schreiber describes it this way:

"Healthy living—or mental health—means that an individual has found a reasonable measure of peace with himself and with his environment. It means that an individual is able to pursue reasonable, purposeful goals; may use his capacities and talents fruitfully; experiences a sense of security, of belonging, of being respected; has a knowledge that he is liked or loved and wanted; has a sense of self-respect, of self-reliance, and achievement; and, in addition, has learned to respect others, to accept others, to love others, to live fairly and in peace with others."†

How then can we achieve a mentally healthy population? We must seek this goal in three ways: by restoring mental health in those who are mentally ill; by protecting people generally against hazards to mental health; and by raising the level of mental health in those who are well.

The first goal, the *restoration of mental health,* is focused on getting rid of a mental illness. The techniques of restoration are applied to those who have already suffered some loss. For the more serious cases they are applied through mental hospitals. Most of these hospitals are conducted under State auspices. Others are Federal hospitals—veterans', Public Health Service hospitals and Armed Forces hospitals. Some are county or municipal hospitals, and some are privately operated hospitals. General hospitals provide some service to severe cases, but they are the chief inpatient resource for cases of neurosis. Large numbers of patients are cared for by outpatient clinics and by private physicians. Very few of these facilities provide all that science has to offer toward restoring mental health.

The second goal, the *protection of mental health,* is also oriented toward mental illness—toward safeguarding people against the hazards that cause mental disorder. Theoretically prevention is applicable to the whole public since everyone is susceptible to some form of mental disorder. But some people live in more hazardous situations—as do young children and migrants—and consequently are appropriate subjects for a more concentrated preventive effort. Science has more to offer toward prevention than, unfortunately, is now being used. Public-health departments and public-health-nursing agencies are our first line of defense, but other agencies, such as those concerned with the restoration of mental health and those designed to elevate the functioning level of well persons, are also in positions to prevent mental illness.

The third goal, the *elevation of mental health*—positive mental health—is not oriented toward illness nor toward the prevention of illness. Rather it has to do with the unrealized potential of the well. The talents or capacities of persons have, as a rule, far greater potential for development and use than has been achieved. The elevation of mental health is, therefore, focused upon the whole population—just as are our schools. In fact the school is the chief instrumentality of a positive mental-health program. The family, the church, the Armed Forces, the job, and recreation are also important agents. All of these encounter, incidental to their main functions, opportunities to treat disorders and to guard against them.

Obviously, these approaches to mental health are interdependent and inseparable. Each has a different primary orientation, but also incidental opportunities to support progress toward the other goals. Each is apt to get leads to its primary task from the experience of the other. A community which allows its agencies

*Reprinted from *Children*, September-October 1956.

†Schreiber, Julius: Mental health flowers in democratic soil. Mental Health Bulletin, March-April 1951. Chicago: Illinois Society for Mental Hygiene.

to go each in its own path without regard for the other is failing to do all that could be done in behalf of mental health. Most communities fail in this respect.

Whether the search for mental health is through restoration, protection, or elevation, it should be scientifically based insofar as science has something to offer. Admittedly there are still vast areas of darkness in which no scientific guides to action have been found, and a practical program must fill in these gaps by common sense, guesses, or other nonscientific procedures. But this does not warrant the neglect of that which is known.

The scientific approach to mental health is especially complicated by the great diversity of mental illnesses and the complexity of causation, including the multiplicity of causes. Few generalizations are possible. There are over a hundred different conditions of which mental disorder is an expression. Moreover, good mental health shows itself in a variety of ways in different cultures. Behavior that would signify mental disorder in one culture may evidence a high degree of mental health in another.

TYPES OF PREVENTION

Because of this diversity preventive efforts are easily misguided. In fact the term prevention is used indiscriminately for a quite different set of goals and processes. There are really four types of preventive work: (1) absolute prevention; (2) presumptive prevention; (3) relative prevention; (4) relapse prevention.

Absolute prevention covers those processes that are so well validated scientifically that if one has the potential victim well under control he can assure protection against the disorder. These preventive procedures are very simple and at the same time quite specific. With the person under control one can surely safeguard him against alcoholic mental disorders by removing access to alcohol or against mental disorders of pellagra by adding a niacin supplement to the diet. He can be assured of a high degree of protection against paresis by intensive early treatment of syphilis, or be protected from traumatic psychoses by protection against head injuries.

But such absolute preventive measures apply to only a small percentage of mental ills, about 8 or 9 percent of the cases entering our mental hospitals. Moreover, these preventable ills are often the secondary manifestations of a more deep-seated ill which is in itself not so assuredly preventable. The urge to solve life's problems with alcohol is a different disorder from that which results from drinking alcohol. Pellagra is the result of food habits which often resist change. Sexual promiscuity, which has much to do with the transmission of syphilis, is mentally a quite separate disorder from paresis. Accident proneness is a completely different affliction from the mental illness of brain injury. These underlying disorders are more akin to the neuroses. For these the preventive effort is in the area of presumptive prevention.

Presumptive prevention is much less certain of success than absolute prevention. Still it is the most frequent form of preventive mental-health work. It is behind most of the efforts in parent education and guides to wholesome living; it is the theme of innumerable pamphlets, films, and lectures.

Presumptive prevention is based upon the fact that studies of those who develop mental disorders tend to show early life experiences, especially in childhood, which seem to be related to the disorder's origin. Sometimes this experience has been a deficiency of parental affection, sometimes a sibling rivalry, sometimes a strict constraint of the child's normal activities, sometimes an unfortunate sexual experience.

Most of the case studies which have revealed these earlier adverse experiences have been made in regard to persons with neurosis or character disorder, psychoanalysis having been especially revealing. But in the efforts to prevent mental disorder by sparing children these hazards, the goal is broader, including the forestalling not only of neuroses, but also of schizophrenia, depressions, manic-depressive psychoses, and several other forms of mental deviation.

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neuroses to apply to other disorders may seem unreasonable, but the illogic is less than it appears. There is strong evidence that many of the more severe disorders are the products of a multiplicity of factors, no one completely determinative. Any factor may be the last straw in the pathogenic combination, and conversely the removal of any factor may give sufficient relief to reverse the deviant tendency and restore a degree of normality. There is good reason to believe that psychological forces are a part of this morbid combination and that the removal of the psychological burden may be enough to turn the tide toward prevention or cure. This form of prevention, therefore, even though uncertain, is fully justified. In fact its neglect falls into the category of failure to apply that which science has to offer.

The neglect of presumptive prevention ise also unfortunate in slowing scientific progress, since science advances through the application of presumptive measures. However, science does not advance if the presumptive is not recognized for what it is, but instead is credited with undue certainty. This obscures the need for more research. For this reason the different forms of prevention need to be identified.

Relative prevention is prevention only in the sense that by treating a problem early it may be prevented from becoming worse. On this basis, child-guidance clinics have been referred to as preventive agencies. There is no doubt about their effectiveness or the validity of their goals. They have, furthermore, built up a sizable body of knowledge and technique bearing on the treatment of children's behavior disorders. But there is little evidence that the disorders seen in a child-guidance clinic would if untreated progress into severe mental illness. These services are so worthwhile within their demonstrated values that there is no need to overstate their goals in order to justify their existence.

Relapse prevention is very similar to presumptive prevention. It is the effort to prevent a recurrence of mental illness in a patient who has been treated to the point of recovery. It is based on the fact that the clinical work entailed in bringing a patient through a mental illness reveals his special sensitivities and susceptibilities and suggests specific ways in which he can be protected from relapse. It is much more custom made than is presumptive prevention, yet is cut from the same cloth.

REASONS FOR FAILURE

These four forms of preventive effort are all good and desirable within their limits and are appropriate components in a community mental-health program. But most communities are entirely lacking in the last three and are not very well equipped in facilities for absolute prevention, which lie for the most part (except for alcoholism) outside the psychiatric and mental-health field and more in the area of general public health.

Why this discrepancy between what science has to offer and what is made available to the public? The answers are varied but, reduced to basic attackable form, the factors fall into six categories: 1) citizen immaturity; 2) professional tradition; 3) agency isolation; 4) mass service; 5) gaps in science; 6) lack of money. A brief inspection of each of these factors may clarify their importance.

Citizen immaturity is probably the most consistent factor behind our lag in services. In a democracy the government is the citizen, who chooses his agents of government, and who carries the ultimate responsibility for service. He cannot assign or relinquish that responsibility. He may choose ineffective, static, or dishonest agents, but he cannot excuse himself thereby. He may leave it to others to design and initiate lines of progress in public or private pathfinding services, but this is his failure. If he carries his responsibility by proxy—as perforce he is bound to do in such a complex of public services as now characterize the American community—he is bound by the adequacy of his proxy. There are available to him as proxies voluntary citizen organizations such as mental-health associations to help him to plan, consolidate effort, and limit it strategically.

In the United States there is no place for the excuse—"I am not political" or

"I am just one person." In every community there is a place for the citizen to get into action. He can at least attend the meetings of his school board. He can volunteer in mental-health agencies. He can serve on local committees. By doing these things he matures as a citizen.

Professional tradition appears as a block often in unexpected ways and places. Why do professional people practice exclusively in an office rather than in the patient's home? Why do many physicians minimize the personal and situational problems of their patients? Why do obvious sore spots in a community continue unchanged even though fully recognized by the profession? Why are architectural plans for schools, hospitals, and clinics so far out of line with the functions to be performed? Tradition lays a heavy hand on progress at many points even after some student of the field has shown how expensive and handicapping it can be.

Agency isolation is a major force in blocking progress. Isolation may be abetted by geographic remoteness, but it may also exist right in the heart of a city. Geographic distances simply make isolation easier. Essentially isolation results from the reluctance to enter into "entangling alliances." It makes administration easier even if less productive. Administration ease, in fact, also appears in many other forms of obstruction.

Isolation is at work when an agency tries to be an omnibus service—to include every need within itself, even though it never can fill them all and thus must remain defective. Every community agency is only a part of service and is dependent on the others. Schools cannot operate at their best if the local public-health services are poor, nor can the latter carry on effective health education without the former. Isolation becomes a self-crippling device. It can be seen in competition between agencies for the tax dollar. Improvement elsewhere in the community may often be a prerequisite to progress within one's own agency.

Mass service prohibits the application of much that science has to offer. It prevents the schools from individualizing their programs sufficiently to permit the child to adjust to the curriculum. Thus it produces failure and retardation. It accounts for "unreachable" labels on people whom the agency finds recalcitrant. To a degree mass service is apparently unavoidable, but administration and programing often use it as an excuse for shortcomings which need not be tolerated. A periodic appraisal of services is apt to reveal them.

Gaps in science tie our hands at every turn. There is scarcely a case need or a community deficiency that does not call forth the frustrating thought, "if we only knew more about this." Only research can release us. But research lags not only because of deficient funds and intentions. Another reason is blind faith—faith in a procedure as the right answer although it has not been tested by research. Related to this is the failure to distinguish between a theory or hypothesis and a scientifically validated finding. A practice based upon a school of thought closed to scientific critique is technically dwarfing.

Lack of money may impede progress, but so may a defeatist idea of poverty. There is certainly a real difference among communities both in the fullness of their public coffers and in the financial reserves of their private citizens, and these differences have a bearing on the use that is made of what science has to offer. But communities of equal per capita wealth show great discrepancies in provisions and in their attitude toward what they can afford. Most communities of modest means use the excuse of poverty beyond its legitimate limits. While the ratio of income between the most affluent state and the least is about 2 to 1, the expenditures for mental health are in the order of 6 or 7 to 1. The discrepancy is the measure of the alibi.

WAYS TO PROGRESS

How can these obstacles to progress be discovered? The answer may be found in a common practice in industry, *the study of failure.* Failure has tremendous value as a lead to advance if it is accepted as a stage in progress rather than a reprehensible quality which must be hidden. Industry could not survive without a careful study of its failures. The anxiety created by failure in human serv-

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ices, however, causes its incidence to be swept under the carpet where it cannot be seen and, of course, cannot be analyzed. Every agency set up to help people with their problems is in a position to discover in what ways the community has failed its citizens. Every case of mental illness figuratively points to these failures, yet these signs go unheeded until the failure becomes too glaring to be ignored.

Specifically every case tells us one or more of the following things:

1. Some of those who have tried to help have had misconceptions of the problem or its solution or downright lack of knowledge.

2. In certain respects the community facilities have been deficient. This may be such things as inadequate recreation facilities, special classes for deviant school children, or probation staff in the court.

3. Gaps exist in scientific and technical knowledge.

There are ways to deal with all three of these deficiencies. First, dealing with them must be considered as important a part of one's job as working to help the case that gave the clue to the defect. The problem must be somebody's business. Second, a strategy of attack must be designed, followed, and recorded. Progress sometimes takes place by haphazard effort, but such effort is generally misleading and expensive.

1955 Summary of Disease Outbreaks*

Carl C. Dauer, M.D., and Granville Sylvester†

One of the characteristic features in the pattern of disease in man has been a constant change from one predominant type of illness to another. This is true even if one limits his consideration to infectious diseases. Some of the acute infections have receded with respect to incidence and others with respect to severity. Certain diseases, especially viral infections, have appeared to increase in frequency or have become relatively more important because of recession of bacterial infections. These changes may have resulted from alteration in the biology of infecting agents, different host-parasite relationships, the development of immunizing agents, improvement or deterioration in social conditions or in the environment.

The pattern of diseases in which food and water have acted as vehicles of infection has also changed. The number of waterborne outbreaks of typhoid fever and dysentery, and of milkborne outbreaks of enteric infections, diphtheria, and streptococcal infections has been reduced from several score each year to an average of less than 10. Even though reporting is far from complete there is no reason to believe that this is not a real decrease in waterborne and milkborne illness.

As these types of disease have decreased, the number of outbreaks in which foods other than milk and milk products have been vehicles of infection has become proportionately greater and possibly some types have increased in frequency. It is probable that changes in eating habits have been responsible in part for the relative increase in outbreaks of staphylococcal food poisoning and undifferentiated gastroenteritis. Mass preparation and dispensing of foods in a greater number of public eating places and schools have increased the chances of exposure to contaminated foods. It appears that the solution of human problems has not kept pace with improvements in processing and equipment and provisions for sanitation of equipment. The human problems most frequently mentioned are poor food-handling practices and failure to use adequate refrigeration of foods susceptible to contamination.

WATERBORNE DISEASE OUTBREAKS

During the last 3 years there has been a continuous reduction in the number of outbreaks attributed to water—from 14 in 1952 to 7 in 1954. In 1955, there were only two outbreaks in which water was definitely incriminated. Although the

*Reprinted from *Public Health Reports*, August 1956.

†Dr. Dauer is medical adviser to the chief, and Mr. Sylvester is analytical statistician with the Morbidity Analysis Section of the National Office of Vital Statistics, Public Health Service.

exact number of cases is unknown, it is by far the smallest in recent years. In 1954, the total, 452 cases, was less than that for previous years. During 1955 one outbreak occurred among fire fighters in the mountains. They had filled their canteens from a water tank previously used to pump cesspools. The number of cases is unknown because none was very ill, and all continued with their duties. The other outbreak was among school children whose water supply was from a well contaminated by a nearby septic tank. Twenty-two cases were reported, and the investigation revealed *Escherichia coli* in the well water. Although not proven, water was a possible vehicle of shigella infection in two children in a summer camp. It was also a possible source of nine cases of infectious hepatitis among school children at a camp.

MILKBORNE DISEASE OUTBREAKS

The number of outbreaks associated with milk and milk products has not been large (fewer than 10) in each of the last 5 years. In 1955, there were 302 cases in 3 outbreaks compared with 200 cases in 9 outbreaks in 1954. While there were only 6 outbreaks in 1952, the number of cases was about 800. Most of the cases (278) reported during 1955 resulted from 1 outbreak in which commercial milk was the vehicle. An investigation revealed a salmonella organism, group B.

The other 2 outbreaks reported in 1955 resulted from milk products contaminated with *Staphylococcus aureus* during the manufacturing process. In one, 15 cases developed after eating ice cream made in an old freezer which apparently had not been thoroughly cleaned. Contaminated cheddar cheese was associated with nine cases. Since staphylococci were found in the center of cheese from unopened samples, it was concluded that contamination occurred during the manufacturing process.

OTHER FOODBORNE OUTBREAKS

With only a few outbreaks in which milk and milk products were associated, naturally, a great majority have been from other foods. The total outbreaks associated with other foods reported in 1955 was 193 with 9,633 cases compared with 234 outbreaks and 11,704 cases in 1954. Reports for 1955 were received from 27 States, Hawaii, and military establishments compared with those from 35 jurisdictions in 1954.

As in 1954, foods most frequently incriminated were turkey and chicken (including eggs), custard filled pastries, ham, and beef. However, unlike previous years when potato salad was the vehicle in a number of outbreaks, there were only two associated with this food in 1955. Various other foods were associated with the remainder. In one outbreak the vehicle appeared to have been contaminated by a food handler who had hepatitis. No foodborne hepatitis was reported in 1954.

During the year only two shigella outbreaks were reported, both of which resulted from a carrier. Of the outbreaks from salmonella infections, two were definitely associated with carriers, and it is believed that many more resulted from unknown carriers. In many instances, the source of outbreaks was not determined, but evidence of improper handling and lack of adequate refrigeration was found to be a contributing factor in most of the outbreaks.

TYPHOID FEVER

The number (5) of typhoid fever outbreaks reported in 1955 was relatively small compared with the 16 in 1954, 12 in 1953, and higher numbers in previous years. One outbreak involved 21 cases in 5 related families that had contact with a carrier. Two other outbreaks were traced to carriers, one of whom was a domestic in a private home and may have contaminated food. The source of the other outbreak was not found. It occurred on an Indian reservation where a number of possible modes of spread were found, but sufficient evidence was lacking to incriminate any of these.

SALMONELLOSIS

Thirteen outbreaks of salmonellosis were reported in seven States during 1955. This is half the number reported in 12 States and 1 Territory for 1954. Three additional outbreaks among military personnel were reported in 1955 compared with none in 1954. The total (971) cases was 17 percent less than the

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[1]Fuller, H. L. and Kassel, L. E.: Antibiotic Med. and Clin. Therapy, 3: 322, Oct. 1956.

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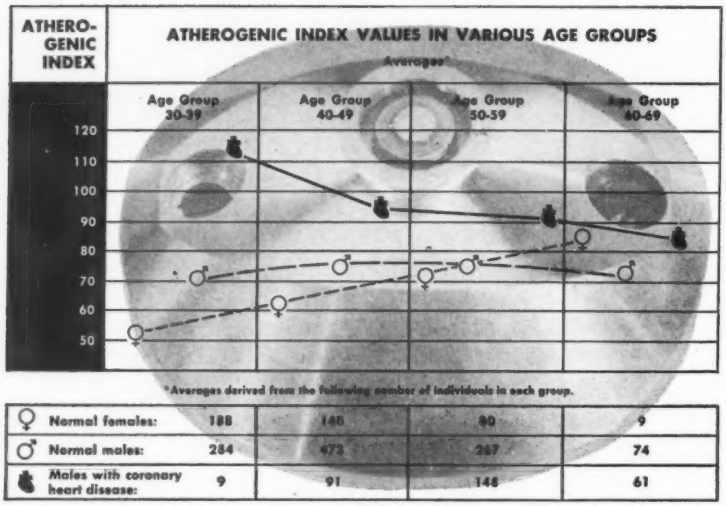

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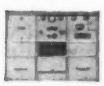

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The object: **identification and quantitation of the giant molecules among the complex lipoproteins of the blood.**

Significance: **elevation of certain blood lipids has been linked to the accelerated progression of coronary disease; disturbed lipid metabolism is suspected as a cause of atherosclerosis. Blood fractionation by ultracentrifuge has led to the development of atherogenic index values shown above: clinical atherogenic trends coincide with the atherogenic index obtained by this method.**

Application: **the ultracentrifuge is now being used to investigate the influence of dietary supplementation with "RG" Lecithin upon atherogenic index values in patients.**

This is but one phase of the vast research on disease states which apparently are associated with lecithin insufficiencies. Lecithin, a constituent of all cells and organs, emulsifier, and lipid transport agent, is the focal point of attention.

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A preliminary report on lecithin in health and disease has been published and is available to physicians on request.

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1,164 cases for last year, but it is about 82 percent greater than the 533 reported in 1953.

All except one outbreak were associated with food. The exception was among persons who attended Pan American games in Mexico, and the source was not determined. In one outbreak at least 278 people supplied by one dairy were affected. Another large outbreak with 250 cases resulted from rice patties served in an institution. *Salmonella montevidio* was isolated from the rice patties, but the source of contamination was not found. In a second institution 6 persons became ill from the ingestion of frozen eggs. *Salmonella pullorum,* commonly associated with eggs, was isolated from the frozen product.

Of the remaining outbreaks, 6 were in private households, 1 in a restaurant, 1 in a club, and 1 in a hospital's newborn nursery. In only 3 of the outbreaks was a carrier found, 1 in the dairy, 1 in the hospital nursery, and 1 in a local store which sold fishcakes to the general public.

Other than those mentioned above, the *Salmonella* organisms isolated were *alachua, anatum, chester, enteriditis, newington, newport, thompson,* and *typhimurium,* and also group B. Three organisms were isolated in connection with one outbreak, and no specific etiology was assigned to it.

SHIGELLOSIS

During 1955 half (5) as many States reported outbreaks of shigellosis as in 1954. This is reflected in the number (10) of outbreaks compared with that (19) for last year. The number of cases (475) is considerably less than the 1,471 reported in 1954, probably because of the distribution of the outbreaks.

In 1955, only 2 outbreaks among children were in institutions, 1 among children in a hospital, and none among school children compared with 17 in these organizations during 1954. The majority of the outbreaks this year were in rural or substandard housing areas. Two cases developed in children in a camp and followed fecal contamination of soil or water, or both.

One outbreak involved 45 persons who attended a wedding reception. An investigation revealed that this was a catered reception, and all food items probably were contaminated by the caterer who was found to be a carrier. One other outbreak resulted from food and the remainder was considered person-to-person transmission.

Six of the outbreaks were from some types of organisms and 4 were flexner types. Only 3 outbreaks were traced to carriers, the source of the other 7 being unknown.

BOTULISM

Five outbreaks of botulism were reported in four States during 1955. Of these, 2 were of type A organisms and 2 were of type B. The other was based on clinical evidence and was not confirmed by laboratory tests. Home canned foods, olives, chili peppers, spinach, wild mushrooms, and chayote were incriminated. In one outbreak 5 individuals became ill after eating chili peppers while at work. The person who prepared the food was accustomed to canning various foods and had canned chili peppers many times before without incident. All five of the victims recovered after receiving botulinus antitoxin. However, of the other 9 cases reported, 7 resulted in death.

STAPHYLOCOCCAL FOOD POISONING

For the last several years increases have been noted in the number of outbreaks of staphylococcal food poisoning. However, the 102 reported in 1955 indicate little change as compared with the 100 for 1954. A number of these outbreaks were confirmed by bacteriological examination, *S. aureus* being isolated in 15 instances. No reports of the isolation of *Staphylococcus albus* were received. In 1954, there were 23 isolations of *S. aureus* and 3 of *S. albus.*

Epidemiological investigation in most instances failed to determine the source, but inadequate refrigeration and improper food handling were usually found. An infected food handler was found in a large number of the outbreaks associated with poor handling procedures. Unsanitary conditions were found to be contributing factors in several outbreaks. About a fourth of the outbreaks were attributed to public eating places and another fourth to private households. A smaller number of outbreaks were associated with bakeries, schools, and field lunches. Hospitals, church gatherings, and picnics were sources of only a few outbreaks.

STREPTOCOCCAL INFECTIONS

A total of 353 cases of streptococcal food poisoning was reported in 4 outbreaks. One outbreak was among employees and student nurses in a hospital. About 54 hours after egg salad was served in 2 dining rooms, 116 persons became ill with streptococcal sore throat. A streptococcus was isolated from the salad and from the kitchen helper who prepared it. The helper was ill prior to reporting for work on the day he prepared the egg salad.

Another outbreak involving 181 school children developed 3 days after they had eaten ham in the school cafeteria. Bacteriological examination of the ham revealed *Streptococcus faecalis*. The meat was found to have been improperly handled. One outbreak not associated with food occurred among employees of a restaurant. No secondary cases resulted from this source, indicating none of the food was contaminated by the employees.

CHEMICAL AND OTHER NOXIOUS AGENTS

Five outbreaks involving 99 cases resulted from noxious agents. One was from *Nicotiana glauca* mistaken for polk weed, and the other four were attributed to chemicals. One involving 50 children resulted from a dye (now prohibited) used to color popcorn. Another was from nicotine sulfate used as a spray on mustard greens. The third was from nitrite in wieners because of faulty processing. Cadmium was incriminated in the fourth and affected 25 persons.

TRICHINOSIS

Ninety-two cases of trichinosis were reported in 5 outbreaks during 1955. Of these cases, 69 were in one outbreak among 111 members of two fraternities. Each maintained its own dining room and served "rare" pork to the members, who preferred this type of meat. No large outbreaks occurred in 1954, thus fewer cases were reported that year. However, in 1953, the case total was 134 including an outbreak affecting 73 persons in an institution. Two of the 1955 outbreaks were associated with bakeries, schools, and infected hogs. Rats seen on the farms supplying the meat were a possible source of infection of the swine.

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Indications: Neurovascular tension states leading to essential labile hypertension, tachycardia, vertigo, palpitations, insomnia, tension headache and certain neurodermatological and gastrointestinal disorders.

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GASTROENTERITIS

Numerous outbreaks of gastroenteritis were reported in 1955. Epidemiological investigations of these failed to determine the etiology in all but a few. The majority were believed to have resulted from food; 2 were traced to water, and 1 to a beverage. The method of contamination was not found but improper handling of food was associated with many of the outbreaks. Inadequate refrigeration was a contributing factor in many instances. Miscellaneous outbreaks included 4 of streptococcal food poisonings with 353 cases. There were also 2 outbreaks from paracolon organisms which affected 90 persons and 5 outbreaks probably of viral origin. A total of 922 cases was reported in these viral outbreaks.

For 16 outbreaks, although food was suspected to be the vehicle of infection, no specimens were available for bacteriological examination, and no specific item was incriminated. In other outbreaks there was sufficient evidence that a particular food was involved but in many instances none was available for laboratory tests, or, on testing, no pathogenic organisms were found. The average incubation period was found to be much longer than the 4 to 6 hours usually found in staphylococcal food poisoning. This suggests food infection, some of which may have been salmonella infections. As suspected vehicles, poultry meat was mentioned almost twice as often as any other food, followed by beef, and a few each of creamed filled pastries, fish, and creamed meat or salads.

Five outbreaks probably of viral origin were reported, 2 in schools, 2 in institutions, and 1 in a mountain camp. Viral studies were done in at least two but in none was the etiology definitely established. However, investigations did rule out food and water as vehicles of infection. One large outbreak occurred among the general population in Ohio and was spread by personal contact to approximately 3,000 persons.

ANIMALS AS SOURCES OF HUMAN DISEASE

Animals are important factors in diseases of man in several respects. They may be reservoirs of infection which may be transmitted to man by direct or indi-

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1. Blank, P., and Boas, H.: Ann. West. Med. & Surg. 6:376, 1952.
2. Piper, C. E., and Nicklas, F. W.: Indust. Med. 23:510, 1954.

*U.S. Pat. 2,626,185

rect contact. Animal products in the form of food (meat, milk, and eggs) may also be sources or vehicles of infection. Some animal products (hides, hair, and wool) may harbor pathogenic organisms which can infect man.

The importance of animals as sources of infection for man is shown by the fact that 80 different diseases may be transmitted to man. Nearly one-half of the diseases listed for reporting by States to the Public Health Service are in this category. The wide distribution of some of these infections is shown by the following figures: 48 States reported human cases of brucellosis in 1954, 41 reported tularemia, 38 reported Rocky Mountain spotted fever, and 32 reported one or more cases of psittacosis.

Animal food products such as meat, milk, and eggs may not only serve as vehicles of infection from the animal to man but they also are excellent media for the growth of bacterial agents. Poultry meat and eggs are occasionally sources of infection, mostly salmonella infections, or are contaminated during the period of preparation by organisms causing food intoxication or food infection.

In 1955, there were 30 such outbreaks reported in which about 1,600 cases of illness occurred. Of these, 25 were associated with meat and 5 resulted from eggs. Seven outbreaks, 4 from poultry meat and 3 from eggs, involving 162 cases resulted from salmonella infections. Of those associated with meat, the sources were unknown but epidemiological investigations revealed lack of adequate refrigeration. In one the meat was probably contaminated by a carrier. However, this was not definitely established because three organisms were isolated, none being from the meat itself.

S. pullorum was isolated from frozen eggs associated with one outbreak. In another, the organism was not isolated from eggs but there was good evidence that they were contaminated with *S. thompson*. In the third outbreak, there was insufficient evidence of contamination in the eggs although they were eaten by all those affected.

Fourteen outbreaks were from staphylococcal enterotoxin, 1 from streptococcus, and 7 were of unknown etiology. As would be expected in the staphylococcal poisonings, improper food handling was a common finding. Many of those with unknown etiology probably were salmonella infections because the incubation periods were longer than is usually associated with staphylococcal poisoning.

MISCELLANEOUS OUTBREAKS

Three outbreaks of meningitis were reported. One was among preschool and school children in western North Carolina. Another affected two children in a family in Utah. The other occurred among Indians on a reservation and involved eight persons during a 2-week period.

Although two outbreaks of encephalitis occurred among pheasants, no outbreaks of infectious encephalitis were reported in humans during 1955. The prevalence of the disease in California, where it is endemic during the summer months, was markedly lower in 1955 than in 1954. A few laboratory confirmed cases of arthropod-borne infections were received from various parts of the country. Eastern equine encephalitis virus was isolated from pheasants in two outbreaks. One of these outbreaks was in Florida, but cold weather set in and no mosquitoes could be collected for laboratory tests. The other outbreak was in North Carolina where several hundred horses and mules died as a result of the disease. The virus was also found in mosquitoes.

Outbreaks of diarrhea among newborn infants were reported by three States. Thirty-seven infants in six hospital nurseries developed the disease from contact with a carrier or improper sterilization procedures or both. *E. coli* was found in specimens of patients in two outbreaks and other coliform organisms were found in specimens collected in another. No reports of laboratory examination were given for the other outbreaks.

Unusual occurrences of diphtheria were reported, particularly during the latter half of 1955. For the entire year, six outbreaks of the disease were reported. Most of the cases associated with these outbreaks were among people in the lower socioeconomic group. Immunization levels in the affected areas were found to be dangerously low.

Reports of 13 outbreaks of infectious hepatitis were received from five States and Alaska. The mode of spread in most

of these was given as personal contact, but some spread probably resulted from fecal contamination. Poor personal habits were given as a possible mode of spread in a few instances.

Food was determined to be the vehicle of infection in 13 cases in one outbreak. Water was suspected in two outbreaks, but there was insufficient evidence to incriminate it. In one, use of unsanitary buckets by members of a football team was considered the source; in the other, polluted water from a stream in a picnic area, used in making a cold beverage, was a possible source.

Five of the outbreaks occurred in hospitals or institutions. Four were among students. The other four were among general populations in localized areas. Although not an outbreak, 201 cases were reported in one city. Of these, 45 were diagnosed as serum hepatitis, or there was a recent history of contaminated needles and instruments.

The social significance of chronic illness*

By Lucille M. Smith†

Every patient with tuberculosis, like every patient with a long-term illness, has one need which overrides all others: to be looked upon as an individual, a whole person—not a disease or a stage of a disease or the focus of a program. And his identification as a person must, of course, be specifically related to his family and to the community of which he has been and is a part.

Other needs of care arise from the nature of the illness as distinguished from the characteristics of the individual. Tuberculosis, although still essentially a chronic disease, combines some of the patterns of both acute and chronic illness. The new therapies have introduced some possibilities for fairly rapid changes in the patient's physical status; he now may experience marked improvement in weeks instead of years. Yet, exacerbations and remissions may occur, and treatment must be modified accordingly. Thus, the patient's reactions and responses to his condition are likely to be in a state of flux, and the care he receives must accommodate to this flux.

How extensive is the variety of services that long-term patients require? A committee at the 1954 National Conference on Care of the Long-Term Patient listed 30 needs, several, or even all, of which a long-term patient will require while at home, or while in a hospital or some other type of institution. This list shows not only the complexity of the patient's needs but the formidable problem of community organization required to assure ready availability of the service indicated (see inset).

We need to appreciate fully that the entire problem of long-term care is not a collection of separate problems to be solved one by one in simple progression. For the community, as for the individual, long-term illness presents a complex of needs so interrelated that many require simultaneous attention. And simultaneous attention is possible only if the major elements of the problem are widely recognized and their relationship understood.

30 NEEDS OF LONG-TERM PATIENTS
- Medical supervision
- Drug and diet therapy
- X-ray therapy
- Surgery
- Psychiatric treatment
- Rehabilitation
- Dental treatment
- Social service
- Bedside nursing
- Physical therapy
- Appliances
- Training in the use of appliances
- Occupational therapy

*Reprinted from *Public Health Reports*, September 1956.

†Mrs. Smith, chief, Health Services Organization Branch, Division of Public Health Methods, Public Health Service, presented this paper at the annual meeting of the National Tuberculosis Association in New York City, May 23, 1956. Extensive use has been made of an analysis of the major elements in long-term care from chapter 1 of "Care of the Long-Term Patient," a report of the Commission on Chronic Illness to be published shortly.

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1. Rehfuss, M. E.: Indigestion, Philadelphia, W. B. Saunders Co., 1943, p. 322.
2. Shaftel, H. E.: J. Am. Geriatrics Soc. *1*:549 (Aug.) 1953.

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Legal aid
Convalescent care under medical supervision
Custodial care
Counseling to modify the family's and the patient's attitude toward chronic illness
Friendly visitors or volunteer corps

ELEMENTS OF LONG-TERM CARE

First of all, there is the relationship of tuberculosis and general medical care: Each requires integration with the other. Second, rehabilitation must be incorporated within all phases of care. Third, we must genuinely ask ourselves: Is institutionalization the primary solution to the problem? The fourth major element concerns mental health: How can we refocus the objectives of both tuberculosis and mental institutions so that adequate mental health services are available in tuberculosis hospitals and adequate care for tuberculosis in mental hospitals? Fifth, how can we improve and extend present, and develop new, means of financing long-term care? The sixth element is that of increasing the numbers of trained personnel and improving the quality of their training. Seventh, every community, and local, State, and national health and welfare organization needs to improve ways to coordinate facilities and services for tuberculosis patients. Eighth, there is need of accelerating improvements in attitudes toward tuberculosis, and, indeed, toward all long-term illness. Finally, broad measures are needed to produce additional facts on the extent of the problem and the utilization of medical care resources for long-term care.

INTEGRATION WITH GENERAL MEDICAL CARE

Medical care has been geared to short-term illness except in special facilities devoted to particular categories of long-term illness, such as tuberculosis.

A general hospital, for example, is likely to operate at a tempo primarily designed for emergencies, a tempo quite unsuited to the chronically ill. Further, professional interest tends to gravitate to the acutely ill except in hospitals with a well-rounded and active teaching program. Attention to the nonacute phases of chronic illness is inclined to be transient and minimal, and professional services to the long-term patient are often meager. In the past, this has resulted in the all too familiar practice of excluding tuberculosis patients from general hospitals. Sometimes, unhappily, it has resulted in substandard tuberculosis care in those few general hospitals which do accept such patients.

But one should not assume that neglect of long-term illness will be corrected by further separation of the long-term patient from general medical care. On the contrary, prevention and care of chronic ills should be an integral part of general medical care.

An encouraging move in this direction is the slowly developing program for routine chest X-rays of all persons admitted to general hospitals. About 24 percent of all general hospitals have such programs, according to reports to the American Hospital Association for 1954 (*1*). If this program is used to detect early tuberculosis among persons not yet aware of symptoms, it will be a valuable means of integrating general and long-term care. If, however, the program is used to expedite the transfer from the general hospital of all patients newly discovered to have tuberculosis, it will serve further to separate the two.

REHABILITATION

Failures with regard to rehabilitation are of two kinds.

Few think of rehabilitation as an integral part of care. Few discern its important implications for prevention. Rather, it is conceived of as a definitive action to be tacked on at the end of

definitive medical care.

Moreover, many people think that rehabilitation is necessarily expensive, that it calls for the elaborate equipment and specially trained personnel of the rehabilitation center. For some patients, to be sure, it is. But such outstanding authorities as Rusk and Kessler repeatedly assert that much rehabilitation is accomplished by simple methods — methods based on an understanding of man's emotional makeup. Nevertheless, it is still commonplace for a patient with tuberculosis to be hurried into a sanatorium before satisfactory plans are made for the support of his wife and children, before he has been assured that his family has not contracted the disease, before he has had fully explained to him what his regimen is to be.

Suppose his disease is discovered in an occupational health survey in a factory where he has just got a job after a long period of unemployment. Probably he will resist violently an abrupt recommendation that he be hospitalized. If he has recently been promoted, or had some other long overdue good fortune, he will need time to become accustomed to the idea that he is in trouble.

If he enters the institution and finds that it has rigid and arbitrary visiting hours and that he has arrived just after one of them, he may suffer unnecessary anguish before he can see his wife again. Such incidents typify unnecessary hazards to restoration of his health.

These incidents represent not so much failure on the part of individual providers of health services, but faulty policy—in the welfare or health department, the factory, the hospital. They point up neglect of rehabilitation possibilities per se. They demonstrate failure to recognize that rehabilitation can prevent further deterioration; that proper preventive measures often obviate the need for rehabilitation and reduce the need for treatment; that prevention, care, and rehabilitation are inseparably intertwined.

HOME CARE SERVICES

Institutional care as the solution to long-term care problems has long been overemphasized. Even though less than one-fourth of our long-term patients are in hospitals and other medical institutions, many who are in such places could be cared for as well or better at home. Construction of some additional medical treatment facilities is still needed, particularly for patients needing rehabilitative services and those whose need is primarily for skilled nursing care. But more and more beds for long-term care will not provide the care needed.

Private practitioners and administrators of general, tuberculosis, chronic, and mental hospitals verify this fact: There are in institutions large numbers of patients whose requirements for care could be better met in the home, if nursing and other services could be made easily available to them—a Gatch bed for the tuberculosis patient; someone to give him an intramuscular drug; someone to help him in and out of bed occasionally; someone to shop for the housewife with tuberculosis.

The story is repeated over and over. As soon as one important need of the patient develops that the family cannot meet, he is placed in a hospital or in some other institution, and then what happens? Once the admission occurs, his place in the home may be lost forever. The doctor and social worker who later try to help the patient and his family plan for his return find that the readjustments he must make are insuperable.

Home care is one antidote to overinstitutionalization. One of the most constructive steps a community can take is providing a generous measure of the services which will enable families to care for their own at home. Each community will need to determine for itself what services should be offered and by whom. The most frequent and perhaps the most important service is that of the visiting nurse, providing bedside care. Other important home services would include social casework, physical and occupational therapy, homemaker service, friendly visitors, and the loan of wheelchairs, hospital beds, and bedside equipment. These services may or may not be integrated into a fully organized home care program; but if the services are easily available, if administrative obstacles to their use can be removed through skillful community organization

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and, if practitioners of medicine are fully informed about these services and will in fact make full use of them, then the community can make substantial progress in preventing unnecessary and unwise institutionalization.

A word of caution is indicated concerning the concept of home care. This phrase to some means simply care at home for the nonhospitalized tuberculosis patient. To others it means something more comprehensive, such as "organized programs having centralized responsibility for the administration and coordination of services to patients and for providing the minimum of medical, nursing, and social services, and essential drugs and supplies" (*2a*). Both kinds of home care have their place in a community. Of 11 organized home care programs in the study made by the Public Health Service and the Commission on Chronic Illness *(2b)*, patients with tuberculosis were under care in 5.

EXAMPLES OF GOOD HOME CARE

The following case shows how a good home care program, administered by a general hospital under Jewish auspices in a large midwestern city, has served a patient with tuberculosis.

Following X-ray examination in a mobile unit, Mrs. A., age 33, was told she had active pulmonary tuberculosis. The public health nurse in her followup visits was met with denial of the diagnosis. Mrs. A. adamantly refused to consider the necessity for care in a State sanatorium 240 miles away from home. Finally, she consented to discuss the possibilities for care in the home care program of a private general hospital.

In discussion with the home care social worker, Mrs. A. continued to deny the diagnosis of tuberculosis. At the same time, however, she expressed her dual fears of infecting her young adopted sons, ages 5 and 7, if she remained near them, or of crippling them psychologically if she left them for an extended period for medical care.

Mrs. A. is an intelligent person of broad interests, a highly skilled commercial artist, whose primary interest is her family. She had experienced many complications in achieving the adoption of her two sons, brothers who had previously been in several homes. These youngsters had barely acquired a degree of security with their adopted parents. Mrs. A.'s husband, an auditor, had a position which often kept him away from home except for weekends. Their income was about $5,000 a year. They were buying a 4-bedroom home in a suburb.

With trepidation, Mrs. A. decided to risk intensive study in the general hospital to see if she could be attended properly in the home care program. A 10-day study in the hospital revealed far advanced tuberculosis with cavitation in the left upper lobe. Sputum was positive. Treatment requirements included: regular medical supervision; complete bed rest in a room to herself with bathroom privileges; isolation, for example, no visitors in her bedroom; relief from all household responsibilities; and most important, full cooperation of the patient in following these requirements.

In this home care program, the medical chief, after staff conference, makes final judgment on the willingness and ability of his patient to give full cooperation. After much discussion with Mrs. A., he decided that she wanted to and would follow his recommendations at home.

The social worker with the family had found that Mr. A. and the children believed that they could live with Mrs. A. and help her follow medical recommendations. Physical arrangements in the home were excellent. A full-time homemaker—capable of managing both the household and the two children—was found to live in. The visiting nurse could reinforce with home teaching the doctor's instructions. The social worker would visit regularly and be on call. The home care doctor would pay periodic visits to the home.

This patient went home from the hospital on October 1, 1954. The children had a small dining table in the hall outside her room. They had their meals at the same time she did. Their chairs were always in the same place for short periods of conversation. Her quiet periods coincided with their school hours and bedtime.

This was a limited type of life for a vital woman such as Mrs. A. By spring, she longed for her usual garden activities

and friends. Her doctor began to authorize graduated activities. For example, she was permitted to have tea with some of her neighbors, who sat in the yard outside her window while she remained in her bed.

By August, 1955, Mrs. A.'s sputum was negative. By November 1955, she was readmitted to the general hospital for chest surgery. A left upper lobectomy was performed. She continued to make excellent progress and in May 1956 was discharged from the home care program.

The strength and unity of this family have been greatly protected and preserved in this period of grave illness. Even so, the two children, as well as Mrs. A., are now overconscious of health. The children show some fear for their mother's health. She in turn does more for them at this time than most 8- and 10-year-olds need. The social worker in the home care program will continue to work with Mrs. A. to aid in her efforts to reach a better balance in helping her children achieve normal growth to independence.

For those who may be moved to explore the possibility of a home care program in their own communities, guidelines for establishing such programs are published by the Public Health Service and the Commission on Chronic Illness (*2b*).

MENTAL HEALTH

While prodigious sums are spent for maintenance of mental patients, comparatively little is spent on treatment and study of mental ills.

Many patients with a primary diagnosis, such as tuberculosis, also suffer mental illness. In fact, sooner or later most long-term patients develop emotional afflictions. In short, mental illness permeates the entire field of chronic illness. In mental hospitals there is too little treatment of tuberculosis; in tuberculosis hospitals, too little emphasis on psychiatric care. The major need for improving this situation is a vast increase in community mental health services and an overhaul of mental institutional services with an active program of therapy as the core of the program. Improvements in comprehensive care for tuberculosis patients also will moderate many of their mental stresses.

MONEY

The financing of care for tuberculosis presents a paradox. Not enough money is being devoted to such care; yet a considerable portion of that which is spent is not used effectively. As the Commission on Chronic Illness says in its report, Care of the Long-Term Patient (*3a*): "Because of inertia, outmoded practices persist; because of timidity, measures demonstrated to be practical in some communities are slow to spread to others; because of frugality, approaches are adopted that prove to be 'penny-wise and pound-foolish'; because of vested interests, the status quo is maintained when a fairly thoroughgoing realignment of methods of providing and financing services would be more economical. . . .

"As voluntary health insurance continues to grow, more money will be available for the care of those who can afford to pay the basic premiums. Trends are in the direction of extending coverage and modifying policies in ways that will benefit the long-term patient; but large groups of these patients are still excluded from the bulk of private insurance and from nonprofit voluntary prepayment plans."

The limitation of insurance on preexisting conditions is one example of an exclusion that adversely affects the patient with tuberculosis; another is the common 120-day limitation on hospital care.

"Government funds are frequently held to a parsimonious level, reflecting the traditional philosophy of providing minimum subsistence and care rather than reconstruction of the health of the person. All too often public monies are made available in ways that practically preclude their more effective use. The manner in which they can be spent may be so restricted by law that they can pay for some services but not necessarily the kind of service the patient needs. Government often waits until the patient is reduced to the level of public assistance, missing earlier opportunities to halt the deterioration of his health. This in spite of the fact that many programs which are adequately supported are demonstrating good results" (*3b*).

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Microorganism	Total no. strains	Sensitive*		Moderately sensitive*		Resistant*	
		No.	Per cent of total	No.	Per cent of total	No.	Per cent of total
Proteus vulgaris	237	209	88.2	28	11.8	0	0
Escherichia coli (including paracolon bacillus)	281	255	92.7	23	8.2	3	1.1
Aerobacter aerogenes	223	183	82.1	40	17.9	0	0
Streptococcus faecalis	160	155	96.7	5	3.1	0	0
Pseudomonas aeruginosa	101	5	5.0	40	39.9	56	55.4
Micrococcus pyogenes var. aureus	6	6	100	0	0	0	0
Klebsiella pneumoniae	3	3	100	0	0	0	0
Alcaligenes faecalis	2	2	100	0	0	0	0

*Organisms inhibited by 100 µg./ml. or less are classified as sensitive, by 200 to 400 µg/ml. as moderately sensitive, and those not inhibited by 400 µg/ml. as resistant.

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Although private charities cannot carry a major share of the operating costs of care of the long-term patient, their use of "venture" capital has been a unique contribution in developing counseling services, homemaker services, and home care programs. Such pilot demonstrations may be used to muster a greater degree of public support.

PERSONNEL

For long-term care, probably the most serious personnel needs are: general practitioners; psychiatrists; specialists in pulmonary medicine and in physical medicine and rehabilitation; public health physicians; nurses, particularly the public health nurse giving bedside care and the practical nurse; trained attendants; medical and psychiatric social workers; occupational, physical, and speech therapists; and vocational counselors. Most of these shortages are not due primarily to insufficient capacity of professional schools. The schools which offer training for most types of the needed personnel report a lack of students.

A few facts on the availability of one class of needed personnel—the medical social worker—will suffice to illustrate the seriousness of these shortages. These facts are available from a joint study by three organizations: the American Hospital Association; the medical social work section of the National Association of Social Workers; and the Public Health Service. It is to be published this fall.

One in every three hospitals for tuberculosis and other long-term patients has a social service department, but only 1 in 8 hospitals for short-term patients. Perhaps, for long-term patients this sounds reassuring. Nevertheless, the sober fact remains that 65 percent of the 410 tuberculosis hospitals have no social worker; 24 percent have only 1 worker; and only 7 percent have more than 3 social workers.

Considerably more patients receive social services in tuberculosis hospitals than in general hospitals. But even in the tuberculosis hospitals, only 35 percent of those in hospitals with social service departments receive this type of service; these amount to 20 percent of patients in all tuberculosis hospitals.

The proportion of graduate social service personnel is somewhat less in tuberculosis hospitals, 60 percent, as compared with 62 percent in general hospitals for short-term patients, and 73 percent in general hospitals for long-term patients.

Other findings suggest that social service departments in tuberculosis hospitals may not be as well integrated with other departments as are departments in general short-term and long-term hospitals. Conspicuous contrasts are shown by the participation of social work departments in such activities as meeting with hospital administrators and ward rounds. Seventy-one percent of the departments in tuberculosis hospitals had met with the hospital administrator, as contrasted with 90 percent in general long-term hospitals. On ward rounds: 27 percent of the departments in tuberculosis hospitals had participated in ward rounds, as contrasted with 62 percent in general long-term hospitals. Twenty-eight percent of the departments in tuberculosis hospitals make no reports to the hospital administrator as compared with 7 percent of each of the other types of hospitals.

With respect to specialty consultations, the proportion of departments having psychiatric and other medical specialty consultations is substantially smaller in tuberculosis hospitals than in the other types of hospitals.

These findings suggest the desirability of special efforts by voluntary and official agencies to strengthen existing administrative relationships through such measures as special studies, consultation, and institutes. The need for additional scholarship aid for both the first and second year of graduate training is equally obvious if the tuberculosis hospitals are to be adequately supplied with graduate social work staff.

Not only must the numbers of most health personnel be increased, but educational programs must be refocused to produce personnel who will be interested in and equipped to care for long-term illness. Education for most of these professions traditionally has been directed to acute illness and has been provided principally in a hospital setting. Interest and skill in serving patients at home need primary emphasis.

COORDINATION OF SERVICES

Lack of coordination of services in some communities is greater than the lack of money. One cannot overemphasize the importance of good working relationships among diverse community agencies, facilities, and interests.

In recent years a promising start in coordination and integration has been made in many localities.

In a few scattered communities—Essex County, New Jersey; Chicago; Milwaukee; and San Francisco, for example—central services for the chronically ill have been established under voluntary auspices to advise patients, their families, and physicians on where various types of counseling and referral service can be obtained. People can be helped to examine various solutions for their problem, learn what and where various services are available, what they are likely to cost, and which services are available without charge or on a part-pay basis.

A single source of these counseling and referral services, however, is most unusual. Most victims of long-term illness must attempt to make contacts with a vast number of programs, agencies, and institutions before they can locate the specific service needed at a given time and, if the cost is beyond their means, find a source of funds with which to pay.

Local tuberculosis associations can do much to help establish similar services in other communities. We have only begun to tap the possibility of joint financing by the voluntary health agencies of much needed community services, of which counseling and referral are but one example.

Another type of coordination is that which is possible nationally. The experience of the Commission on Chronic Illness is a notable example. Born of the wish of four national professional associations and the Public Health Service to make order out of various unrelated efforts to improve long-term care, the commission has concluded its brief but highly successful career. It is gratifying to see some of the forecasts of things to come. The American Medical Association, for instance, is now publishing the *Chronic Illness News Letter,* in connection with which it will also serve as an information center for the many inquiries which the *News Letter* stimulates.

A committee has been appointed to develop a program of research and education relating to the aging processes. This committee has already begun plans with the Public Health Service for ways to bring together State medical societies and State health departments on projects to improve the health of older people. Still another committee is reviewing the progress being made by the voluntary prepayment plans in extending coverage to the long-term patient.

In the field of rehabilitation, the American Medical Association has recently created an intra-association group, consisting of representatives of several of its councils, to look into the present status of rehabilitation, review existing programs and procedures, and suggest methods for improvement and coordination. Field work by the Council on Medical Service is already underway.

The American Hospital Association meanwhile has appointed a Committee on Chronic Illness in its Council on Professional Practice. The committee plans to publish new materials to (*a*) further accentuate the vital role of rehabilitation, (*b*) answer how-to-do-it questions including those of financing the hospital care of the chronically ill, and (*c*) show examples of good programs in action.

The American Public Health Association and the American Public Welfare Association likewise are projecting programs in which the major objective is to achieve coordination of services and facilities—in itself an example of coordination.

ATTITUDES

Attitudes toward long-term illness, warped for generations, are changing as its nature and the needs of its victims become understood and as methods of treatment are learned. Neglect and pessimism are being replaced by an aroused social conscience and by confidence in the value of treatment and rehabilitation. The change is not sufficiently rapid or extensive, of course, and it needs to be accelerated among persons in the health professions even more than among those

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in the general population.

In the past, misconceptions constituted the single most important block to changing attitudes. Because much long-term illness is painful, ugly, depressing, and costly, it is still a major feat to gain attention and a constructive attitude for its victims.

Nevertheless, negative ideas have yielded. Long-term illness is no longer commonly regarded as hopeless and the care of the long-term patient is becoming a successful undertaking.

NEED FOR ADDITIONAL FACTS

The final major element in the community's chronic illness program, the need for additional facts, should be first. Although most families are affected by it, we have no accurate up-to-date measure of the dimensions and various characteristics of long-term illness. Considerable research is being conducted on causes of the various chronic diseases and better measures for treatment, but little attention is given to studies of how best to apply what knowledge we already have.

Since 1949, the United States National Committee on Vital and Health Statistics has emphasized the need for more adequate information on illness. In 1953 that group published a blueprint of the needs for statistics on illness in the general population (*4*). In addition to a few community studies, the Federal Government is now about to undertake a continuing health survey. Data collected on a sampling method will provide periodic estimates for the country as a whole and by regions on the prevalence and incidence of the major categories of sickness and disability.

The information obtained will include for each major disease and type of impairment "such things as number, age, sex, occupation of persons afflicted, the duration of disability, the amounts and types of medical or other services received for, or because of, the illness or disability, and ability to work or engage in other activities, for example, the ability to attend school in the case of a child, or, in the case of a housewife, ability to perform usual household duties" (*5*).

These surveys will provide facts much needed to comprehend the problem of chronic illness and to give direction to community plans for its solution.

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Heart disease at mid-century*

Paul D. White, M.D.†

In this year, still in the middle of the twentieth century, our hearts control much of our destiny. Diseases of the heart and arteries are responsible for a very large percentage of the illnesses and deaths in this country, even among children and young and middle-aged adults.

Despite the slowness with which we are moving in our efforts to meet this challenge, really great progress has been accomplished in several directions:

Cardiovascular syphilis has been almost wiped out as a result of the remarkably

*Reprinted from *Public Health Reports*, August 1956.

†Dr. White is emeritus clinical professor of medicine, Harvard University Medical School. He is also executive director of the National Advisory Heart Council and president of the International Society of Cardiology. The accompanying comments were presented at the American Heart Association's dinner for opening the National 1956 Heart Fund Campaign, January 31, in Chicago.

successful campaign for the prevention and early recognition and treatment of syphilis itself and the introduction of the antibiotics, especially penicillin. Once cardiovascular syphilis made up nearly 25 percent of all cases of heart disease; now it is well under 1 percent.

Rheumatic heart disease, at one time the most common type of all, is on the wane. In New England 30 years ago, it led all the other kinds of heart disease in prevalence. Now it is a poor third, This reduction is associated with several factors, notably *(a)* the improvement in living conditions and *(b)* preventive measures to control infection by the hemolytic streptococcus, largely responsible for this type of heart disease.

Another advance of importance, achieved through remarkable development in surgery and splendid teamwork between physician and surgeon, is the rescue of a great many patients, thousands and thousands, afflicted with severe mitral stenosis. It is to be hoped that, with the reduction of rheumatic heart disease, much less need will exist in the future for this magnificent surgery of today.

Subacute bacterial endocarditis, formerly called malignant because it killed almost 99 percent of all patients, is now not only curable in about 75 to 80 percent, but can probably be prevented in many patients by the use of antibiotics. Moreover, as we reduce the incidence of rheumatic and congenital heart disease, subacute bacterial endocarditis will decline.

Other infections responsible for serious heart diseases in the past also are becoming scarce. Included among them is diphtheria, which used to be fatal in many patients because of its effect on the heart.

Chronic constrictive pericarditis, once incurable, is clinically reversible now in more than half the patients by the use of surgical techniques developed in the past 25 years. Its fundamental cause, tuberculosis of the pericardium, should be, along with tuberculosis in general, steadily on the road to oblivion so that in another generation there should be little or no demand for such surgery.

TEN LEADING CAUSES OF DEATH, 1955

Death rate	Estimated rates per 100,000 population	Percent of total
352.0	Diseases of heart	37.9
147.6	Malignant neoplasms	15.9
106.6	Vascular lesions of CNS	11.5
55.6	Accidents	6.0
39.8	Certain diseases of early infancy	4.3
27.5	Pneumonia (except of newborn) and influenza	3.0
19.4	General arteriosclerosis	2.1
15.2	Diabetes mellitus	1.6
11.9	Congenital malformations	1.3
10.8	Cirrhosis of liver	1.2

Source: National Office of Vital Statistics, Public Health Service, Monthly Vital Statistics Report, vol. 4, No. 13, May 28, 1956

Thyrotoxicosis used to be the cause of heart disease in an occasional patient. Now, as a result of early recognition and much more satisfactory treatment of thyrotoxicosis, heart disease from this cause is rare.

Cor pulmonale, both acute and chronic, is on the wane as a result of the lower incidence of pulmonary embolism and the control of dusty air, indoors and out. How much harm smog may be doing is not known.

Even one of the more prevalent and serious kinds of heart disease, hypertensive heart disease, is now beginning to yield to treatment. The vigorous attack made on hypertension in the last two decades through surgery, diet, and the use of drugs has been extremely helpful.

PROBLEMS FOR THE FUTURE

We haven't done much about the most important heart disease of all, namely, coronary heart disease, except that we can recognize it more readily than we used to, we know a little more about its course, and we can treat it more intelligently.

Congenital heart disease also remains as a great problem for the future. We have learned little about it, and we cannot prevent it. We know that it can be caused by german measles in the mother during the first 3 months of pregnancy, but there are certainly other factors and causes not yet discovered. The one bright spot with respect to congenital defects is that a number of them can be corrected, in whole or in part, by surgery. This in itself is, of course, no small achievement.

Thus, progress against heart disease is still far from its goal: prevention of new cases and adequate treatment of heart

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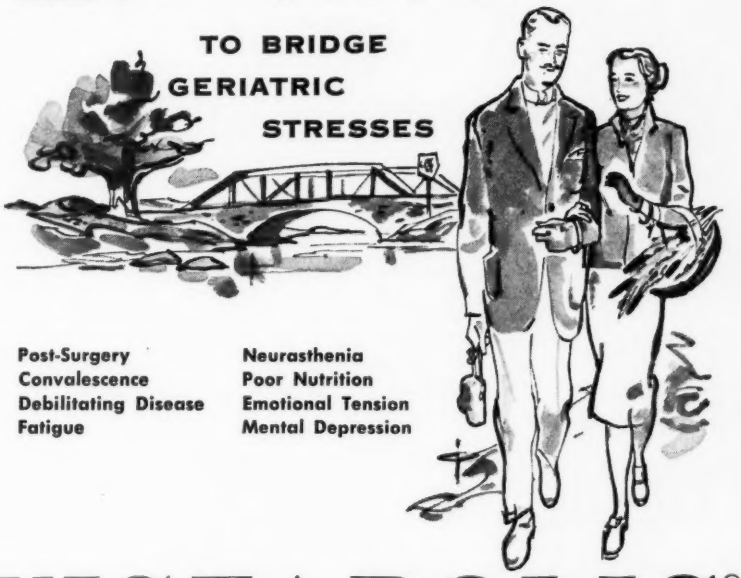

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disease where it exists. The major cardiac problems are congenital defects, high blood pressure, and coronary heart disease. I think, too, we must take cognizance of the problem of apoplexy, or to use the longer term, cerebral vascular disease, which afflicts so many people with or even without high blood pressure. Also, there is much to be done about the prevention of disease of the larger arteries, the aorta and the blood vessels of the legs in particular. Arteriosclerotic disease of the kidney is still another problem that needs much further study for the sake of prevention, recognition, and treatment. We have found that it tends to be one of the great hazards of old age. Perhaps with its control, healthy old age can be prolonged.

The need for applying, to the best of our ability, the knowledge we already have, in private practice and in community programs, deserves special attention. For example, it is known that the great majority of cardiac patients not only can work but should work. Physical exercise and mental activity are two of the best therapeutic measures for patients with heart disease. Like persons who are crippled in other parts of their bodies, cardiac patients perform some of the best work in the world.

In the study of heart disease, the epidemiological approach offers opportunities not otherwise available. This approach needs to be used more extensively, not only in our own country but world wide. The study of the prevalence of the various kinds of heart disease in different groups and communities here and in foreign lands can be valuable both for the people of other countries and for those in this country. International teams should cooperate in the study of heart disease so that the situations in one country can be compared with those in another.

Heart programs are among the most important health campaigns ever planned. Though we may be not one-third of the way toward the maximum achievement, the years ahead are filled with promise. We can protect the hearts of the young and the middle-aged with something much more substantial than the casual advice to "take it easy," even if that is good advice, which it may not always be. If we pursue these programs with vigor, 10 years from now, I venture, we shall have remarkedly reduced heart disease in the young and middle-aged throughout the world.

The health of school children and youth*

The school children and youth of today enjoy a remarkably good state of health, according to current mortality

*Reprinted from *Statistical Bulletin*, Metropolitan Life Insurance Company, August 1956.

records. The experience among Industrial policyholders of the Metropolitan Life Insurance Company, typical of that among the urban wage-earning families of the United States and Canada, shows that at ages 5-14 years the annual death rates in recent years have been only 3 per 10,000 girls and 5 per 10,000 boys. At ages 15-19 years, the corresponding annual rates are about 5 for girls and 12 for boys.

The trend of the death rates during the postwar period shows that, with only minor exceptions, there has been a steady reduction in mortality from 1946 to 1955. During this period, the declines have been relatively more rapid for girls than for boys. For all children and youth at ages 5-19 years, the death rate in 1955 was about 40 percent less than in 1946.

Accidents constitute the major hazard to the lives of children and young people. Currently they account for about one half of the deaths among boys and for one fourth among girls. For boys, especially, the accident hazard increases rapidly as they reach their late teens.

Cancer and its allied conditions (malignant neoplasms) rank far ahead of all other diseases in the mortality picture for children and youth in 1954-55; there has been a tendency for the death rates to rise. For most of the other major causes of death among school children and youth, the death rates were very low in 1954-55—less than 2 per 100,000 in most instances. Comparison with the record for 1946-47 shows that the major part of the decrease in mortality at this stage of life has been due to the control of diseases of infectious origin. Only one decade ago, tuberculosis was a leading cause of death among children; at ages 15-19, it then ranked first among the diseases in this insurance experience. The declines in tuberculosis mortality during the decade have been spectacular —about 95 percent at ages 10-19 and 85 percent at ages 5-9. Almost as rapid have been the mortality reductions from the communicable diseases of childhood (measles, scarlet fever, whooping cough, and diphtheria) and from heart disease, most of which is due to rheumatic fever at these ages. The death rates from pneumonia have been cut sharply, and marked reductions have been registered for poliomyelitis.

To fill out the health picture, the mortality record must be supplemented by data regarding illness, disability, and impairment. Unfortunately, such morbidity data are very fragmentary. A recent survey of physicians in private practice in the State of Washington† showed that a respiratory disorder—usually a condition of the tonsils and adenoids or the common cold—was the primary complaint among children at ages 5-14 years in about one fourth of the home or office visits. Accidental injuries—principally lacerations of the face and fractures of the upper limbs—ranked next in frequen-

†Standish, Seymour, Jr., et al, *Why Patients See Doctors*, University of Washington Press, Seattle, 1955.

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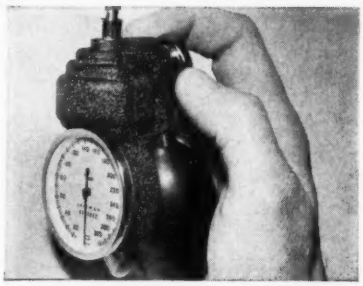

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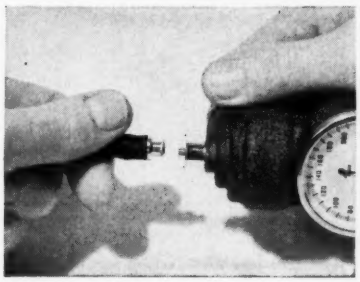

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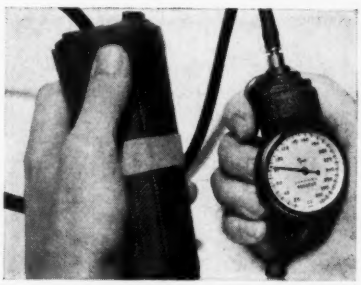

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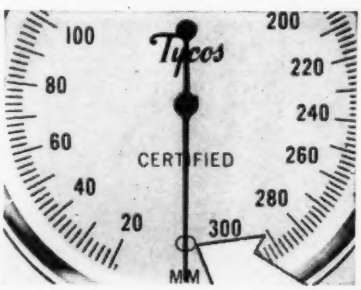

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cy, accounting for 15 percent of the visits. Sizable proportions of the cases were reported for eye and ear disorders and for allergies—mainly hay fever and asthma. It is noteworthy that health checkups and immunizations accounted for 7 percent of all physician visits for children at ages 5-14 years.

Hospital care for school-age children is mainly for surgery, according to the experience among dependents of the office and field personnel of the Metropolitan Life Insurance Company during 1954-55. More than one third of the cases were hospitalized for accidental injuries, usually ambulatory cases treated surgically, and about one fifth for operations on the tonsils and adenoids. Also important as causes of hospitalization were operations for appendicitis and for benign tumors and cysts.

Large numbers of children have impairments requiring rehabilitation and care. Orthopedic impairments are estimated to affect over one million persons under age 21, with possibly half this number seriously crippled. Many of the latter involve a congenital malformation. The number of victims of cerebral palsy and epilepsy at these ages, and those with serious impairments of vision or hearing may reach several hundred thousand. There may be more than 500,000 under 21 years of age with heart disease. Mental disorders and mental deficiency in childhood and youth constitute a problem of significant dimension.

The children and youth of today are benefiting in health from a good environment in the home, at school, and at play. Equally important are the advances in medicine and nutrition that have promoted their health. Further improvement by way of reduction in mortality depends primarily on control of accidents and chronic disease in children. Accordingly, the major goals in child health today emphasize the positive factors by which children may attain optimal physical and mental health. To this end, main reliance must be on fostering good habits of health, nutrition, and safety. The success of efforts in this direction will be greater with recognition of the impact of emotions on attitude and conduct. At the same time, increased attention must be given to the problems of rehabilitating and caring for the children with physical and mental impairments.

Control of the infectious diseases*

During the past two decades epoch-making advances have been made in the control of the infectious diseases. Among persons insured under Industrial policies in the Metropolitan Life Insurance Company, the mortality from tuberculosis and from pneumonia and influenza fell nearly 90 percent between 1933-35 and 1953-55. Almost as rapid has been the decline in the death rates from syphilis and acute rheumatic fever. The principal communicable diseases of childhood—measles, scarlet fever, whooping cough, and diphtheria—together recorded an average death rate of only 0.2 per 100,000 policyholders in 1953-55, and typhoid fever and paratyphoid fever a rate of less than 0.05. A number of other infectious diseases, including puerperal septicemia and erysipelas, have likewise been reduced to vanishing proportions as

*Reprinted from *Statistical Bulletin*, Metropolitan Life Insurance Company, June 1956.

"I thought I was getting too old for high heels—low heels didn't help. My leg hurt down to the ankle."
"That's funny. I'm on my feet all day but it was my arms that bothered me."
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Extraordinary progress has also been made in the control of two diseases—smallpox and malaria— which had long been major health problems in the United States. About 8,000 cases of smallpox were reported in our country during 1935; in 1955 there was not a single one. Even more impressive has been the success scored against malaria. In 1935 more than 137,000 cases of the disease were reported in the United States; 20 years later there were only 477 cases reported, and a considerable number of these infections were acquired by members of our Armed Forces while serving overseas.

A wide variety of infectious diseases, including pneumonia and syphilis, have come under a large measure of control because of the effectiveness of antibiotic therapy. In some diseases—diphtheria and smallpox, for example—immunization has been the major factor. In others, such as typhoid fever and malaria, improved environmental sanitation has greatly reduced the sources of infection. The specific measures for prevention and treatment have been supplemented by such general factors as better nutrition, more adequate medical and hospital care, and widespread health education.

Despite the outstanding gains made against the infectious diseases, they continue to be major causes of sickness and death in the United States. In 1955 tuberculosis still accounted for more than 15,000 deaths, and pneumonia and influenza for about three times as many. The common cold and other respiratory conditions, year after year, impose an enormous amount of disability. The infectious diseases take an additional toll in less obvious ways. For example, not a few children annually are born with congenital malformations because their mothers had German measles during the early months of pregnancy. Then, too, infectious disease often hastens the death of people with serious chronic diseases.

Books received

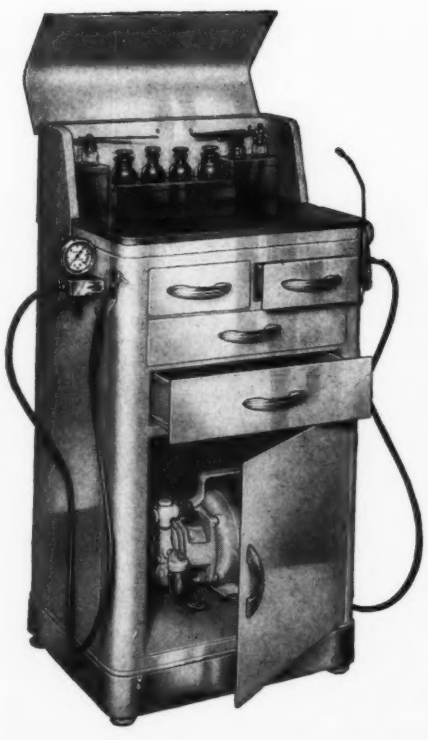
Books received for review during the period from September 5 to October 5, 1956, are listed below. Reviews will be published as space permits.

Williams OBSTETRICS. By Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins University, and Obstetrician-in-Chief to the Johns Hopkins Hospital. Ed. 11. Cloth. Pp. 1212, with illustrations. Price $14.00. Appleton-Century-Crofts, 35 W. 32nd St., New York 1, 1956.

A Manual of the COMMON CONTAGIOUS DISEASES. By Philip Moen Stimson, A.B., M.D., Professor of Clinical Pediatrics, Cornell University Medical College; Consulting Pediatrician: The New York and Roosevelt Hospitals and Hospital for Special Surgery (New York City), and Meadowbrook (Hempstead), Bergen County (Bergen Pines), Norwegian Lutheran (Brooklyn), Horton Memorial (Middletown), and St. Francis (Poughkeepsie) Hospitals; President of St. John's Guild (The Floating Hospital); Formerly, Attending Physician, The Willard Parker Hospital, and Director of the former Poliomyelitis Service of Knickerbocker Hospital; and Horace Louis Hodes, A.B., M.D., Pediatrician-in-Chief and Director of the Department of Pediatrics, Mt. Sinai Hospital, New York City; Clinical Professor of Pediatrics, College of Physicians and Surgeons at Columbia University; Consulting Pediatrician, North Shore Hospital; Formerly, Assistant in Pathology and Bacteriology, Rockefeller Institute for Medical Research, Associate Professor of Pediatrics, Johns Hopkins Medical College, and Director of Sydenham Hospital, Baltimore. Ed. 5. Cloth. Pp. 624, with illustrations. Price $8.50. Lea & Febiger, Washington Square, Philadelphia 6, 1956.

ALCOHOLISM. Edited by George N. Thompson, A.B., M.D., F.A.C.P., Associate Clinical Professor of Neurology and Psychiatry, School of Medicine, University of Southern California, Los Angeles, California; Formerly, Chief of Psychiatric Service, Los Angeles County General Hospital; Psychiatric Consultant, Department of Corrections, State of California; Fellow of the American Psychiatric Association; Fellow of the American Academy of Neurology. Cloth. Pp. 548, with illustrations. Price $9.50. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1956.

THE LABYRINTH—Physiology and Functional Tests. By Joseph J. Fischer, M.D., Clinical Professor in Otolaryngology, School of



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Medicine, Tufts University; Visiting Surgeon for Otorhinolaryngology, Boston City Hospital; former Associate of Adam Politzer and Senior Otolaryngologist with Gustav Alexander, Policlinic of Vienna. Cloth. Pp. 206, with illustrations. Price $6.00. Grune & Stratton, 381 Fourth Ave., New York 16, 1956.

PEDIATRICS. Edited by Donald Paterson, M.D., Formerly Clinical Professor, Department of Pediatrics, The University of British Columbia; and John Ferguson McCreary, M.D., Professor and Head, Department of Pediatrics, The University of British Columbia; with 36 Contributing Authors. Cloth. Pp. 654, with illustrations. $14.00. J. B. Lippincott Company, East Washington Square, Philadelphia, 1956.

THE INITIAL MANAGEMENT OF THORACIC AND THORACO-ABDOMINAL TRAUMA. By Lawrence M. Shefts, M.D., Thoracic Surgery Consultant to Brooke Army Hospital, Fort Sam Houston, Texas; United States Air Force Hospital, Lackland Air Force Base, San Antonio, Texas; San Antonio State Tuberculosis Hospital, San Antonio, Texas; Veterans Administration Hospital, Kerrville, Texas; Veterans Administration Regional Office, San Antonio, Texas; Former Thoracic Surgery Center for the Air Force, Randolph Air Force Base, Randolph Field, Texas; Co-Chief, Thoracic Surgery Service, Robert B. Green Memorial (County) Hospital, San Antonio, Texas; Associate Professor of Surgery (Thoracic) University of Texas Medical School (Postgraduate School, Robert B. Green Memorial Hospital, San Antonio, Texas); Assistant Professor of Surgery (Thoracic), Baylor University Medical School (Postgraduate School, Brooke Army Hospital, Fort Sam Houston, Texas); Professor of Thoracic Surgery (Hon.), Division of Scientific Medicine, University of Nuevo Leon, Monterrey, Mexico. Cloth. Pp. 121, with illustrations. Price $6.50. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1956.

Rosenau PREVENTIVE MEDICINE AND PUBLIC HEALTH. By Kenneth F. Maxcy, M.D., DR. P.H., Professor Emeritus of Epidemiology, The Johns Hopkins University, School of Hygiene and Public Health. With contributing authors. Ed. 8. Cloth. Pp. 1465, with illustrations. Price $15.00. Appleton-Century-Crofts, 35 W. 32nd St., New York 1, 1956.

AN ATLAS OF ANATOMY. By J. C. Boileau Grant, M.C., M.B., Ch.B., F.R.C.S. (Edin.), Professor of Anatomy in the University of Toronto. Ed. 4. Cloth. Illustrated. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1956.

ENVIRONMENT AND THE DEAF CHILD. By Steven Getz, Ph.D., School Clinical Psychologist-Audiologist, California School for the Deaf, Berkeley, California. Cloth. Pp. 173. Price $3.75. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1956.

ETIOLOGIC FACTORS IN RENAL LITHIASIS. Compiled and Edited by Arthur J. Butt, B.S., M.D., F.A.C.S. Cloth. Pp. 401, with illustrations. Price $12.50. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1956.

THE SUPPORT OF MEDICAL RESEARCH. A Symposium organized by The Council for International Organizations of Medical Sciences. Established under the joint auspices of U.N.E.S.C.O. and W.H.O. Edited by Sir Harold Himsworth, chairman of the Conference; and J. F. Delafresnaye, C.I.O.M.S. Cloth. Pp. 170. Price $4.00. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill., 1956.

THE PLACE OF OSTEOPATHY IN THERAPEUTICS. By Jocelyn C. P. Proby, M.A., (Oxon), B.Litt., D.O., M.R.O., The John Martin Littlejohn Memorial Lecture, 1953. Paper. Pp. 34. Price two shillings & sixpence. The Osteopathic Publishing Company, 20 Buckingham Street, London, W.C.2.

THE EXPANDING CONCEPT OF OSTEOPATHY. By Willis Haycock, D.O., M.R.O. The John Martin Littlejohn Memorial Lecture, 1955. Paper. Pp. 35. Price three shillings. The Osteopathic Publishing Company, 20 Buckingham Street, London, W.C.2.

OSTEOPATHY AS REVEALED IN THE WRITINGS OF ANDREW TAYLOR STILL. By S. Webster-Jones, D.O., M.R.O. The J. Martin Littlejohn Memorial Lecture, 1954. Paper. Pp. 33. Price two shillings and sixpence. The Osteopathic Publishing Company, 20 Buckingham Street, London, W.C.2.

THE CONTRIBUTION OF JOHN MARTIN LITTLEJOHN TO OSTEOPATHY. By T. Edward Hall, D.O., M.R.O. The John Martin Littlejohn Memorial Lecture, 1952. Paper. Pp. 42. Price two shillings and sixpence. The Osteopathic Publishing Company, 20 Buckingham Street, London, W.C.2.

YEAR BOOK 1956. Paper. Pp. 72, with illustrations. The Osteopathic Institute of Applied Technique, 30 Tonbridge Road, Maidstone, England, 1955.

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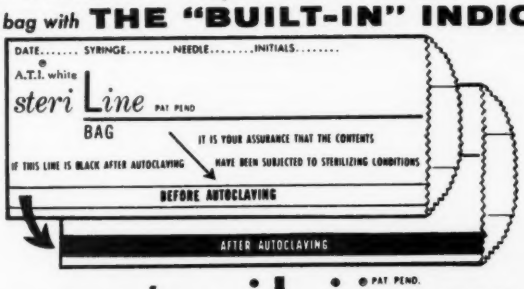
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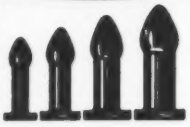

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Anderson, Melvin J., Jr., CCO '56; 16612 Strathmoor, Detroit 35, Mich.
Baba, Robert J., from Dumont, N.J., to 1101 W. Broward Blvd., Fort Lauderdale, Fla.
Bakeman, Robert E., CCO '56; Grand Rapids Osteopathic Hospital, 1919 Boston St., S. E., Grand Rapids 6, Mich.
Barnes, William G., from 306 Armour Road, to 2014 Swift Ave., North Kansas City 16, Mo.
Barnett, Thomas, from Detroit, Mich., to 22 Warner Plaza, Kansas City 11, Mo.
Bartlett, E. C., Jr., from 3021 Central Ave., N.E., to 118 Richmond Ave., N.E., Albuquerque, N. Mex.
Bass, Robert P., Jr., PCO '55; 5615 Spruce St., Philadelphia 39, Pa.
Bath, Wilmer H., from 505 Fayette St., to 1301 Fayette St., Conshohocken, Pa.
Benseler, Ted C., from 218 S. Broad St., to 16 N. Clinton St., Middletown, Ohio.
Bergin, Philip S., KC '55; 227 S. Park View St., Los Angeles 4, Calif.
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Bruno, Anthony M., from Los Angeles, Calif., to 1137 E. Garfield Ave., Glendale 5, Calif.
Bryce, William Charles, COPS '55; San Gabriel Valley Hospital, 115 E. Broadway, San Gabriel, Calif.
Burke, John T., from Grove City, Pa., to Walnut St., Stoneboro, Pa.
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Calise, Salvatore, J., from 3151 Gollihar Road, to Highway #9, Rural Station, Corpus Christi, Texas
Calitri, Carmine J., from 6225 Clarkson Ave., to 4663 E. Gage Ave., Bell, Calif.
Carnegie, W. B., from Cleveland, Ohio, to 377 Morewood Parkway, Rocky River 16, Ohio
Carneval, Daniel C., from Grove City, Pa., to 3213 W. Ridge Road, Erie, Pa.
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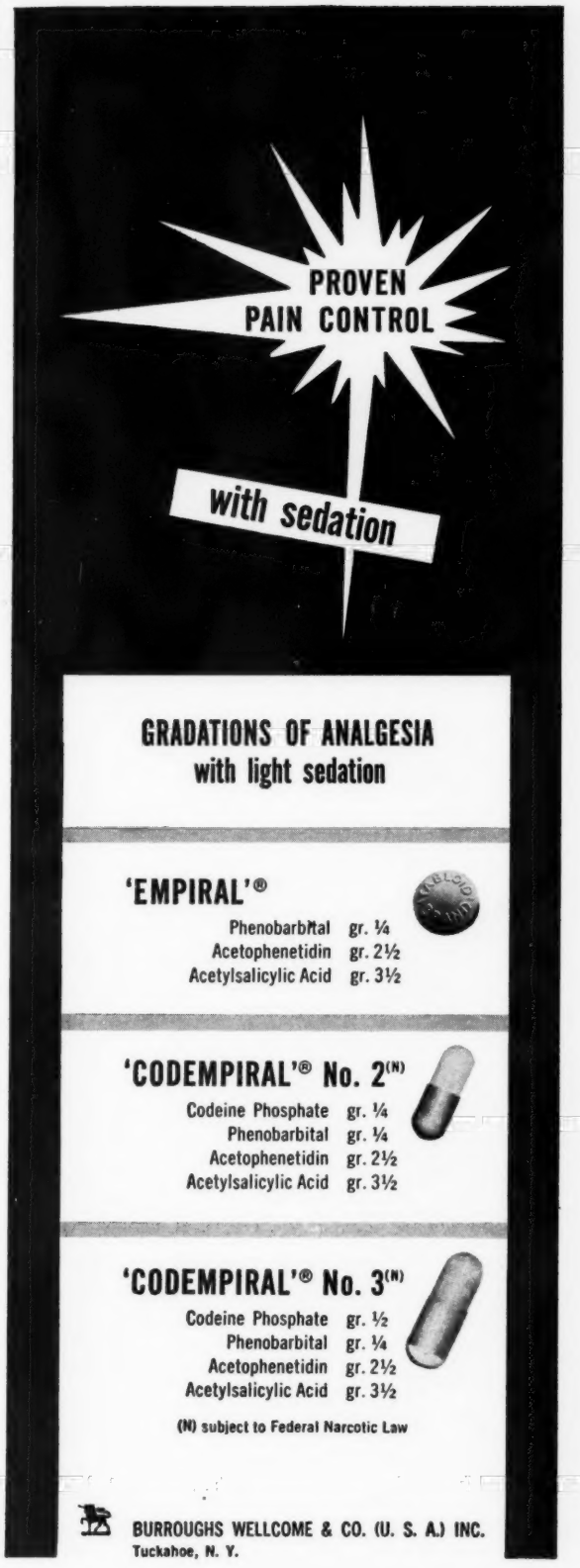

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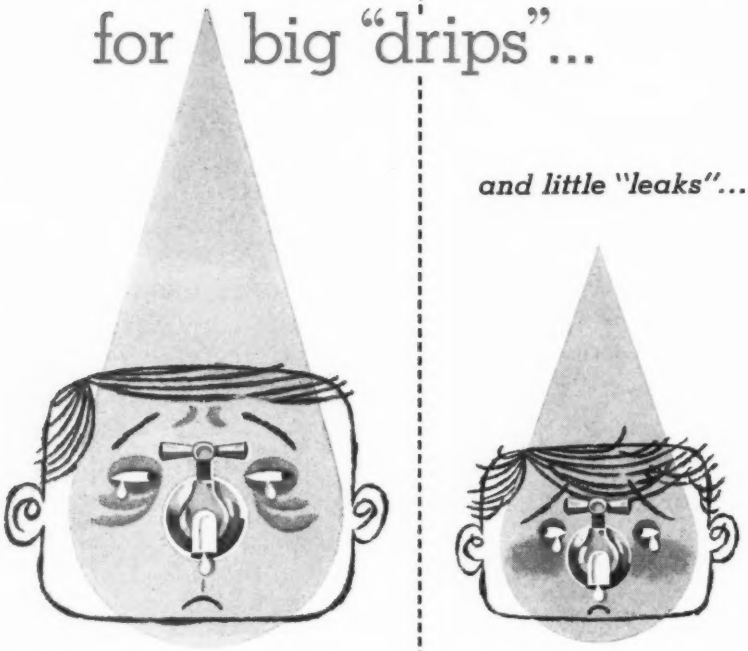

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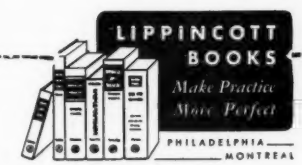

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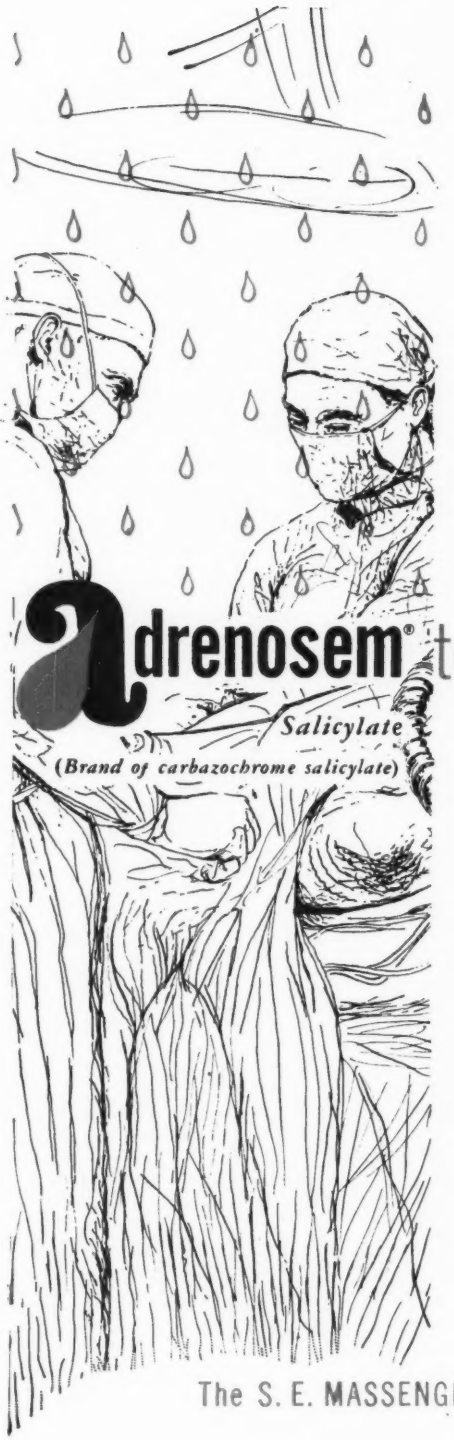

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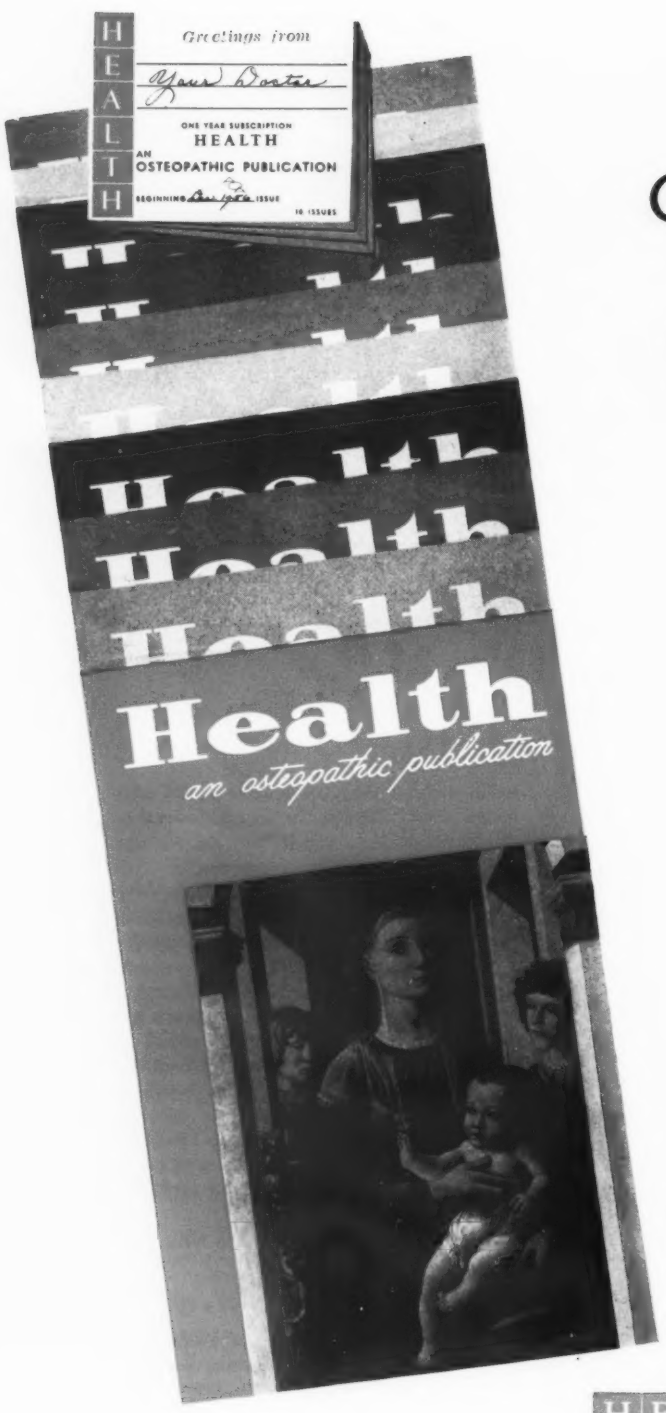

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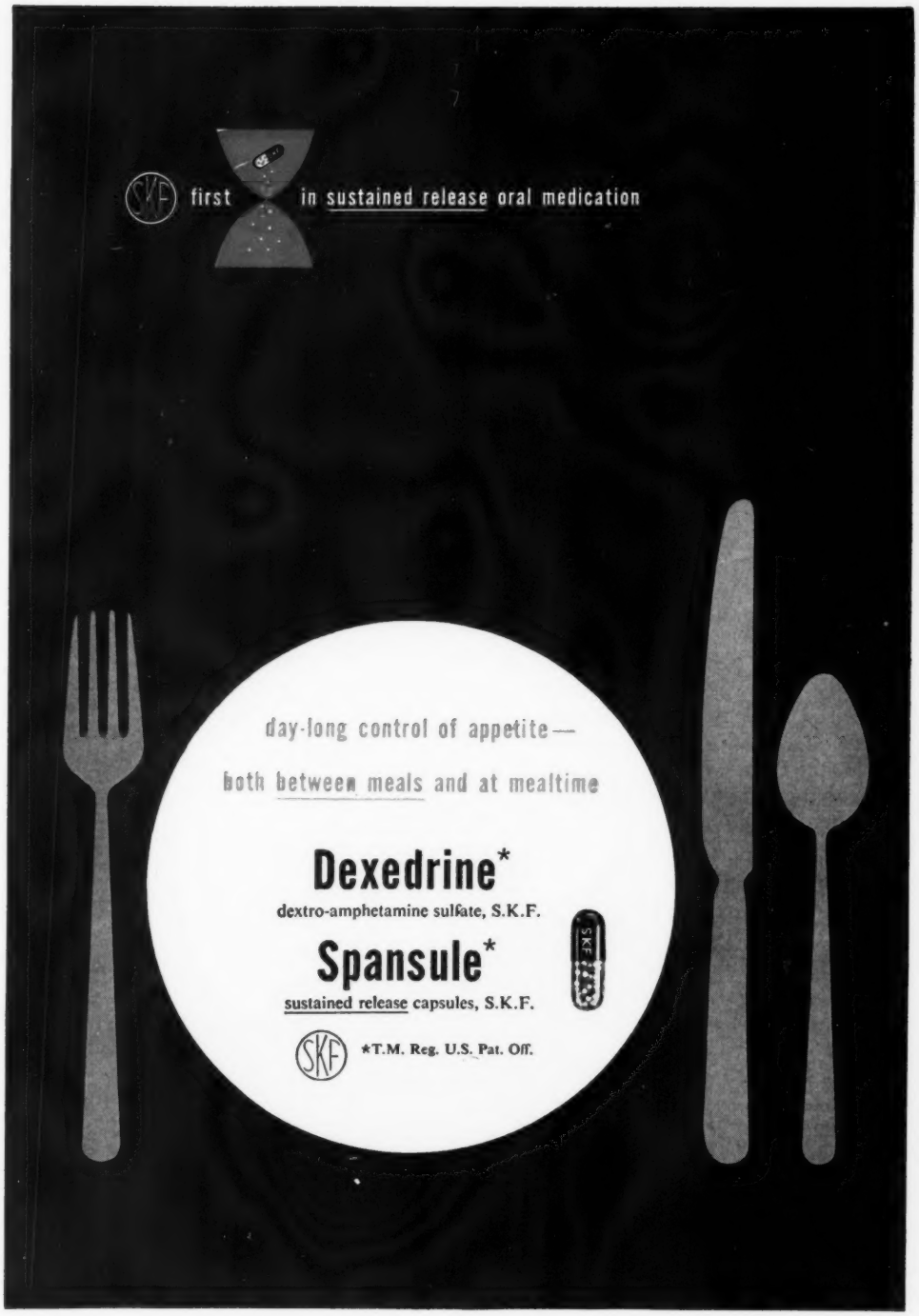
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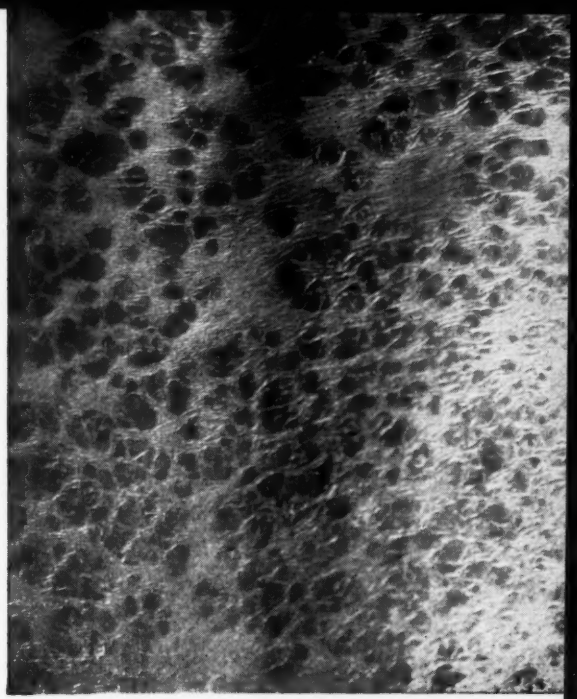
1. Hellerman, L., *Physiol, Rev.* 17:454. 1937.
2. Barron, E.S.G. & Kalnitsky, G., *Biochem.* J. 41:346, 1947.
3. Goodman, L. S. & Gilman, A., *The Pharmacal Basis of Therapeutics*, 2nd ed., 1955, p. 970.



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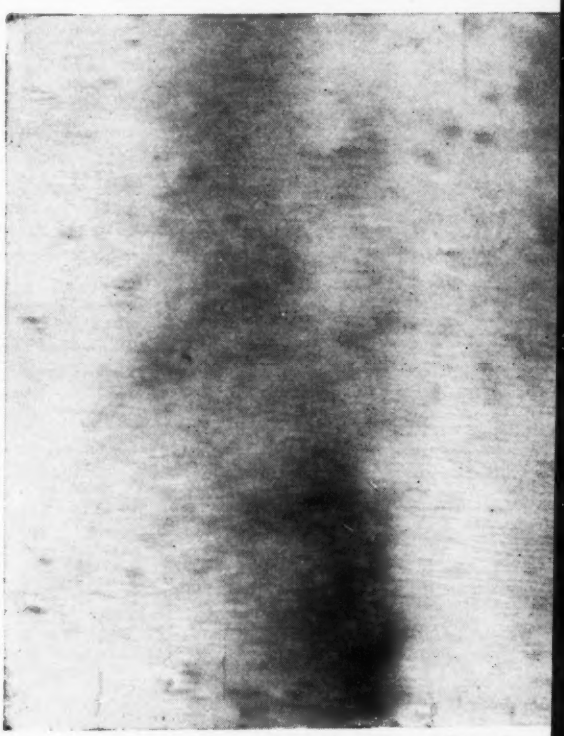

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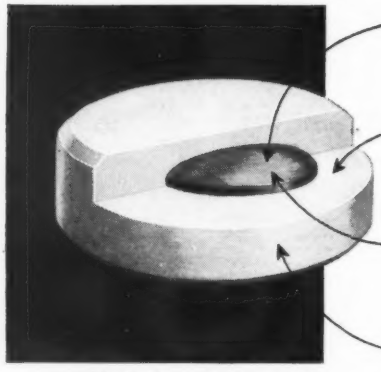

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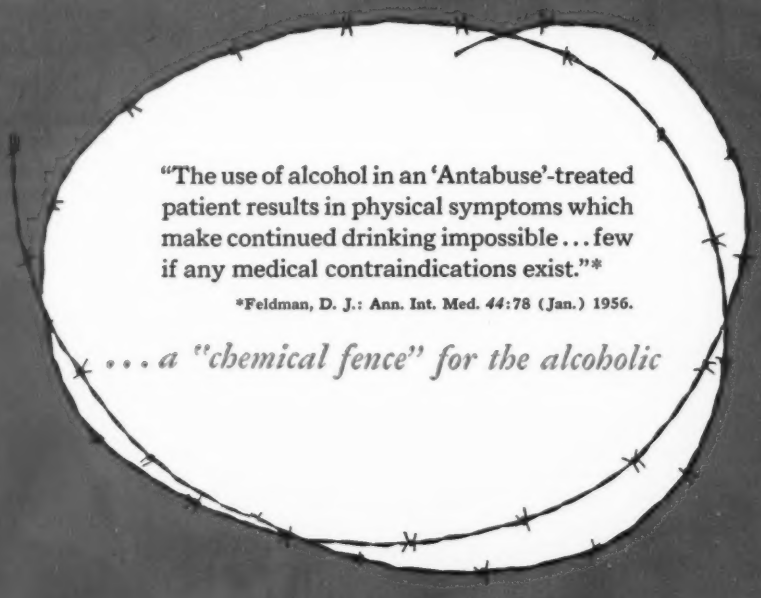

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